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APRIL, 1893.

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TRANSACTIONS

OF THE

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION

DURING THE YEAR 1892.

VOLUME II.

THE F. A. DAVIS COMPANY, LONDON AND PHILADELPHIA.

1893.

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Mr. GEORGE STOKER.

Annual Report of Council.

THE Council, in presenting the Second Volume of the Transactions congratulates the Fellows upon the continued prosperity of the Association.

The roll of Fellows has been increased to seventy-five, eleven new Members having been elected. Five have resigned, whilst they have lost one by death, viz., Sir MORELL MACKENZIE, the first President.

Two Hon. Fellows have been elected, Prof. VON SCHROETTER, of Vienna, and Dr. FRANCKE HUNTINGTON BOSWORTH, of New York.

The balance sheet is in every sense satisfactory.

The contributions, whilst maintaining a high standard of excellence and interest, indicate an earnestness of scientific research by its Fellows which promises well for the future, and is a solid evidence of the usefulness of the Association.

Special discussions upon Voice Culture, the Surgery of the Frontal Sinus, and further contributions upon the Bacteriology of the Upper Respiratory Tracts, together with a large supply of Microscopical Exhibits, were conspicuous in meetings of the past year.

Signed on behalf of the Council,

LENNOX BROWNE,

President.

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THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

MEETING HELD MARCH 25th, 1892.

The President, MR. LENNOX BROWNE, *in the Chair.*

THE minutes of the previous meeting having been read, the PRESIDENT said—

Gentlemen,—Since we last met the Association has lost its most distinguished member, one whom we chose as our first President, and to whom an everlasting debt of gratitude is due, not only from the Fellows of this Society working in the same special field, but from the whole medical profession and—through the increased power to give relief which the researches and lessons of this great man afforded them—from the world at large. Such a complete and sympathetic memoir of our deceased Fellow, Sir Morell Mackenzie, has appeared in the March number of the JOURNAL OF LARYNGOLOGY that it is unnecessary, with the full programme we have before us, to attempt any elaborate extension of that just eulogy, but I may be permitted to say, without being accused of hyperbole, that had it not been for the genius and energy of Morell Mackenzie our department of medicine would never have taken the prominent position which is unanimously accorded it in the present day by all fellow workers in other countries; and only the few who like myself can remember the virulence with which he was attacked some thirty years ago when he established the first special hospital for throat diseases can understand how a nature, singularly lovable in all other relations of life, became embittered and combative towards so many of his own calling. Much of this feeling was, I am convinced, due to the knowledge that many even of his own colleagues in his public work were intensely jealous of his early recognized abilities and of his phenomenal success in practice. It reads, indeed, rather

curiously, in the light of recent events, to find the names of these men, occupying the very highest seats in the councils of the colleges, gladly but humbly appended to microscopical reports of morbid growths removed by Mackenzie.

My acquaintance with Mackenzie dates from a period prior to my qualifying, and when I returned to this country from voyaging round the world he was the first to call on me. Well do I remember the little dispensary in King Street, and the inaugurative days of Golden Square. In 1865 I began to learn the laryngoscope by making drawings for Mackenzie, who, himself no mean artist—for he himself illustrated his Jacksonian prize essay—was at once the severest and the most appreciative critic I ever met with. From 1866 to 1873 inclusive, I was in daily converse and association with him, and, as I hope I have never been backward in acknowledging, I owe much of whatever success I have attained not only to his teaching and enthusiasm, but to the example of his unflagging energy—greatest always whenever, as was not infrequent, he was suffering physically—to his marvellous capacity for organization, and for taking pains in even the minutest details. It is another remarkable trait in Mackenzie's character, which was full of paradoxical contrasts, that though occasionally accused of a too cursory treatment of his private clients, he would devote hours to an interesting hospital case, and that none of his written words were allowed to go to press until polished and finished to an extent that appeared almost fastidious.

Gentlemen, Mackenzie has his reward; the world appears surprised that one known so universally for the last thirty years as a successful practitioner and author should have died so young, but of him indeed it may be said, his works live after him, for nothing he wrote can ever be devoid of solid value, and, as I ventured to predict when congratulating him twelve years ago on the appearance of the first volume of his great work, it will be impossible for any author on any subject connected with laryngology to avoid quoting the name of Morell Mackenzie as an authority.

Let me, in conclusion, express a hope that the jealousies and the bickerings connected with this great teacher will now subside, and that many of our craft whom we highly respect and esteem and whom we would gladly have with us, but who have from various motives withheld or withdrawn from this Association, will now join us, if only as an acknowledgment of the indebtness they, in common with us, must feel to Morell Mackenzie as one of the brightest lights in that science which it is the purpose of our body to advance.

Dr. GEORGE STOKER, the Secretary, then read the following correspondence, and the President's suggestion that these letters be entered upon the minutes was unanimously approved of :—

"Feb. 4, 1892.

"The Council of the British Laryngological and Rhinological Association meeting to-day, make it their first business, on the proposition of Mr. LENNOX BROWNE, President, seconded by Mr. MAYO COLLIER, unanimously to offer a vote of condolence and sympathy to LADY MACKENZIE and her family on the death of SIR MORELL MACKENZIE, the first

President of this Association, and to record their deep sense of the loss which that branch of science represented by this Association has thereby sustained.

"Presented on behalf of the Committee, which immediately afterwards adjourned, by

"GEORGE STOKER, Hon. Secretary."

"19, Harley Street, Cavendish Square.

"LADY MORELL MACKENZIE and her family desire to return their grateful thanks to the Council and Fellows of the British Laryngological Society for the kind and sympathetic vote of condolence sent by the Society on the occasion of the death of SIR MORELL MACKENZIE. The kind expressions of esteem and regard for Sir Morell and the recognition of his labours are greatly valued by Lady Morell Mackenzie and her family."

The following gentlemen were unanimously elected Fellows of the Association :—

G. A. DAVIES, Esq., M.R.C.S., Newport, Monmouth.

NIEL GRIFFITHS, Esq., M.R.C.S., Cheltenham.

GEORGE HOLLOWAY, Esq., B.A., M.D. Cantab., 5, Bentinck Street, London.

L. HEMMINGTON PEGLER, Esq., 7, Radnor Place, London.

The PRESIDENT showed a patient suffering from *Hypertrophic Rhinitis with old history of Lupus.*

Case I. : The notes of this interesting case were as follows :—

M. M., aged forty-six, female, presented herself at the Central Throat and Ear Hospital on January 11th of this year, complaining of "pain in her throat" of two months' duration. She had suffered with nasal stuffiness for eight or nine years, and had been under treatment for polypus of the nose, for lupus of the nose, and for inflamed ankle joint, the nature of which was obscure. She was also the subject of frequent "gatherings" on her fingers, general debility, and "colds in the nose." Had been delivered of one child, which was born at the eighth month and lived four weeks only.

State on admission : Has a very unpleasant smell from her nose, a persistent tickling in her throat, especially when in bed, and her mouth is always dry in the morning. She cannot appreciate the smell of strong coffee, tea, or cooked meats.

Both nostrils were found to be obstructed, the left more than the right. In the *right* is seen an irregular, bright pink, spongy granulation mass, apparently springing from an hypertrophied septum. The middle turbinal cannot be seen, but the inferior is observed to be swollen and pale in contrast. The *left* nostril is chiefly occupied by similar granulation masses, growing from the middle turbinal. They are paler than those on the

septum in the right nostril, and readily bleed on probing. The inferior turbinal on this side is also hypertrophied, and still paler than the new tissue. There is well-marked pharyngitis lateralis.

Has not lost weight and is not troubled with night sweats. The lungs are normal, with the exception of some harsh breathing over both apices. The expectoration is rather free, but contains no bacilli of tubercle and no elastic tissue.

A portion of the growth from the middle turbinal was removed, and on examination Mr. Wingrave found as follows :—

"The greater part of the structure removed consists of small cell-"inflammatory tissue, covered with plain columnar and columnar ciliated "epithelium. Mucoid degeneration is well marked in some places, "whilst in others masses of cell-clusters are seen, resembling, and possibly "identical with, 'giant cells.' Blood-vessels are plentiful, and their "walls show marked fibrosis, whilst here and there epithelioid pro-"liferation has blocked the lumen. Very little erectile tissue can be made "out, as it is invaded by the small cells. Cyst-like invaginations of "columnar epithelium are shown in several of the sections, whilst normal "mucous acini are fairly numerous. Lastly, the bone and periosteum "are found to be perfectly healthy, excepting that here and there the "small cell tissue appears to be invading the cancellous spaces. *There "is no necrosis.*"

Mr. Lennox Browne remarked that this case was one of great interest from several points of view :—(1) Mr. Wingrave's report, in which he suggested that the nature of removed tissue was that of a low type of tuberculosis—lupus, in fact—was made in ignorance of the clinical history. (2) The powers of repair in this patient were unusually good in one suffering from lupus. She had made an excellent recovery from the external ulceration, and promised to do as well under treatment of the intra-nasal disease. (3) The treatment adopted had been that of curetting and free rubbing in of a sixty per cent. solution of lactic acid, the parts having been previously cocainized.

The President also read notes of a second case of *Lupus of the Nose, Pharynx, and Larynx.*

Case II. : E. W., female, aged eighteen, was admitted into the Central Throat and Ear Hospital, February 8th, 1892, complaining of deafness and soreness of throat and nose. Her history was that, three years ago, a patch of ulceration commenced on the left side of her nose, which became very swollen and red, but gradually returned to its normal size. The ulcerative process, however, continued to extend, reaching her lip six months ago. There is no family history of lupus or tubercle, but the patient is ill-nourished and ill-developed. The father suffers with some 'throat disease.' She has been deaf since infancy, and has lost flesh lately.

On examination, the tongue was seen to be covered with large, red tuberculated excrescences, which extended upwards, involving the faucial pillars and the soft and hard palate. The uvula had disappeared, and cicatrization shows that the disease had attacked the pharynx.

In the larynx some small tuberculated nodules were seen in the inter-arytenoid space. Both arytenoid eminences were infiltrated, as also both

ventricular bands, but the vocal cords were free. The epiglottis was nodulated and pale.

In the nose the disease was confined to the skin, which was involved for some distance from the edge of both alæ.

Her expectoration was very scanty, and did not contain any bacilli, nor any lung tissue.

There was marked dulness at the base of right lung, with numerous moist sounds.

These conditions were practically unchanged on March 12th, when she developed erysipelas. This was by no means her first attack, and as the previous ones have been attended by improvement in her lupus, it is to be hoped that the same happy result may again eventuate.

Dr. W. MILLIGAN.—*Primary Nasal Syphilis. Second Attack of Syphilis.*

Mr. President and Gentlemen,—The comparative rarity of second attacks of syphilis makes the record of the following case of interest.

The patient, a married man, aged thirty-two, first noticed a certain amount of pain and discomfort in the right nostril four weeks after exposure to a possible source of syphilitic infection.

Previous history: Towards the latter part of 1884 the patient consulted a London surgeon on account of a painful sore situated at the margin of the nail of the right index finger.

The sore was first treated merely as a poisoned wound. During the period of treatment, however, a roseolar rash appeared upon the back and chest. The cubital and axillary glands became enlarged. The sore was accordingly looked upon as being of syphilitic origin, and treatment by means of mercury was immediately resorted to. In six months' time patient was dismissed as cured. During this period, however, the patient's wife became syphilised, and accordingly underwent a mercurial course of treatment during the greater part of 1885.

The first child was born in July, 1886, the second in January, 1888, and the third in February, 1890. These children appear to enjoy good health. In 1887 the patient's right pupil was noticed to have become markedly smaller than his left, and has remained so ever since. Early in 1889 patient felt much run down in health, and consequently underwent another course of treatment. From that time up to the date of the present affection he had enjoyed comparatively good health. In June, 1891, four weeks after exposure, the right nostril became irritable. On examination the tip of the nose was found inflamed, and painful to the touch. Within the margin of the right ala nasi, upon its septal aspect, an oval indurated sore about the size of a small bean was found. The sore had all the appearances of a true Hunterian chancre. No enlarged glands were detected.

The sore was destroyed by means of the galvano-cautery, and the raw surface dressed with iodol. A nasal douche was prescribed, and mercury in the form of hydrarg. c. cretâ pills (gr. i.) was ordered three times a day. Seven weeks after inoculation a fairly copious roseolar rash appeared upon the chest, and a few isolated papules between the shoulder blades. These, however, rapidly disappeared. The nasal chamber was kept con-

stantly irrigated with antiseptic washes, and the sore dressed, at times with iodol powder, at times with ungt. iodoformi. In three weeks the raw surface left from the application of the cautery had healed. The mercury pills were continued, and small doses of iodide of potassium given in addition. At the present time the general condition appears satisfactory and there has been no further trouble in the nose.

In this case we have, then, an example of a second attack of syphilis seven years after the first.

Mr. Jonathan Hutchinson, in his classical work upon syphilis, admits the possibility of second attacks, and cites several illustrative cases. He quotes from Diday, who says, "That second attacks of syphilis, although "not very rare, are yet exceptional to rule; that when they occur they "prove that the patient presenting them had been cured of his previous "attack so far as it was a blood disease, though, perhaps, not necessarily "in respect to tertiary symptoms. Also that the character of the second "attack will be influenced by the length of the period which has elapsed "since the first, and perhaps also by its severity." In the case before us, no doubt the severity of the attack was considerably modified by the effects of the previous condition. It is interesting to note that in the first attack the sore was upon the right index finger, in the second within the margin of the right ala nasi.

Dr. WARD COUSINS mentioned that he had seen a woman with well-marked primary syphilis of the lip with eruption. He had not had any experience of second attacks of syphilis.

Dr. STOKER denied that the fact that the patient developed the sore on the second occasion proved that he was cured of the first attack. He pointed out that the patient, in this case, had contracted syphilis seven years before, and four weeks before the chancre developed in the nose he had exposed himself a second time to infection. That fact did not necessarily militate in favour of his having altogether recovered from his first attack.

Dr. DONALD STEWART observed that the case was very interesting and unusual. It occurred to him that possibly there might have been a flaw in the diagnosis. The patient was said to have had syphilis, and his wife had syphilis not in a very unusual place. The children, however, were healthy. With reference to the occurrence of tertiary symptoms, these were probably due to some local weakness of the tissues that caused a development somewhat akin to what they saw in tumours. That was not said to be a blood disease.

Dr. STOKER said he merely wished to protest against its being accepted as a dogma, that the subsequent contraction of syphilis was to be accepted as proof that a previous attack had been cured.

Dr. WARD COUSINS said he thought it was generally understood that so long as syphilis remained a blood disease it was communicable, but the moment it became a question of tissue lesions only, then it was no longer capable of being conveyed. He had had striking examples of the truth of this. Of two brothers, both in the Royal Navy and both syphilitic, one was scarred all over, and had suffered from syphilitic epilepsy. He married a young wife and had a healthy lot of children.

The other, still subject to secondary manifestations, married, and his wife miscarried several times.

Dr. MILLIGAN, in reply, said that personally he did not doubt that the patient had had syphilis previously, having become inoculated on the index finger. Moreover, the wife was taken to the same surgeon who had attended to the husband, and he had treated her accordingly. He thought that the evidence was conclusive. So far as he was aware the children were healthy, and there had been no miscarriages. The patient had been free from all symptoms for several years, and had apparently absolutely got rid of the effects of the original attack. In quoting from Mr. Hutchinson's remarks, he understood him to mean that a man might be cured of the blood disease, but was still susceptible to local tissue changes.

Dr. W. MILLIGAN.—*Idiopathic Abscess of the Larynx.*

Mr. President and Gentlemen,—The rarity of cases of idiopathic abscess of the larynx seems to me to be sufficient reason for bringing the details of the following case under your notice.

The patient, a man aged twenty-three, was a wood turner by trade.

Family history: Father died at the age of fifty from heart disease. Mother alive and healthy, aged fifty-six. Has one brother and two sisters alive, all healthy. One sister died in infancy.

Previous history: Patient has never been robust, but has never had any severe illness. No history of syphilis.

Present condition: The first symptom noticed was a slight swelling over the region of the right ala of the thyroid cartilage. Shortly afterwards a certain discomfort on swallowing. There was no dyspnœa and no aphonia. The swelling having gradually increased, the patient consulted a doctor, who told him that he was suffering from a tumour in the neck, and recommended the daily application of iodine liniment. Three weeks after the onset of the trouble the patient came to the Manchester Hospital for Diseases of the Throat for advice. On examination, a swelling, the size of a pigeon's egg, was found lying over the right thyroid ala. The swelling was painful on pressure, and on palpation gave the idea of deep-seated fluid being present. The skin had been much irritated by the frequent application of iodine. There was slight dysphagia, but no aphonia or dyspnœa. Tongue was furred, bowels constipated, and temperature slightly above normal. On laryngoscopic examination an ovoid swelling was seen upon the laryngeal surface of the epiglottis upon its right side. The mucous membrane covering it was slightly congested. Elsewhere the laryngeal mucous membrane appeared normal. On palpation with the laryngeal sound the swelling was found to be slightly elastic. At a point directed towards the middle line of the larynx the mucous membrane presented a slightly yellowish tinge. The right cord was nearly concealed by the swelling, the left cord appeared normal. On pressure being applied to the swelling on the outside of the neck, no change in the size of the laryngeal swelling (which was kept under close observation while this was being done) could be detected.

It was considered that the patient was suffering from a slowly-increasing

abscess of the larynx, the tendency of which was to point externally. Sedative inhalations were ordered and poultices to be applied externally. The pain and swelling, however, went on increasing, and as there was no longer any doubt as to the presence of matter, a free incision was made, and a quantity of pus and broken-down *débris* evacuated. A drainage tube was put in and the parts dressed. No change having taken place in the appearance of the laryngeal swelling, it was decided to incise it freely. An incision was accordingly made with a laryngeal lancet across the yellowish area already spoken of, with the result that a small quantity of pus was expectorated. The swelling rapidly subsided, and at the end of a fortnight no trace of the original condition could be seen.

The case appears to be of interest—

(1) From the very insidious course the disease ran, in this respect resembling the cases recorded by Thin, De la Sota, Ganghofner, Marcet, and Hillman, and referred to in an article upon Abscess of the Larynx by Richards, published in "The International Journal of the Medical Sciences," May, 1890.

(2) From the absence of any marked laryngeal symptoms.

(3) From the tendency of the disease to point outwards (although the path of communication must have been a very small one).

The symptoms are, as a rule, severe ; at other times the disease may run a mild and uneventful course, and terminate by spontaneous rupture.

The commonest causes of the trouble appear to be infectious diseases, scarlet fever, measles, etc., and frequent colds. Males appear to be much more frequently affected than females. Of the twenty-six cases observed by Richards, sixteen were males and nine were females. In one case the sex is not mentioned. The decade between twenty and thirty affords the largest number of cases.

With regard to the second point, at no time was there any indication that the laryngeal mucous membrane was the seat of disease. There was no dyspnœa and no aphonia. The situation of the abscess in any particular case must naturally determine the special symptoms. In a series of thirteen cases recorded by the late Sir M. Mackenzie the abscess occurred at the root of the epiglottis six times, in one of the ventricular bands four times, and in one of the ary-epiglottic folds three times. In the series of cases recorded by Richards the base of the epiglottis was involved six times, the arytenoid eminence twice, the ary-epiglottic folds three times, the ventricular band once, the vocal cords three times, the sub-glottic portion of the larynx six times, the internal surface of the thyroid cartilages twice, and the pyriform sinus twice.

Occasionally the abscess may be somewhat diffuse and involve several of the component parts of the laryngeal mucous membrane.

Although no communication could be made out between the laryngeal abscess and the abscess in the peri-thyroid tissues, there is little doubt but that some path existed between these two foci. As a rule the abscess points internally, but at times externally, as in the present case and in a similar case recorded by Rühle.

In respect to treatment, early incision should be resorted to, other-

wise there is a risk of the abscess causing suffocation. If the abscess be very large it may be necessary to perform tracheotomy before attempting to open it.

Dr. WARD COUSINS.—*A Case of Deep Abscess of the Neck followed by Acute Laryngeal Symptoms.* Tracheotomy. Recovery.

A child, one year and ten months of age, was admitted under my care into the Royal Portsmouth Hospital in January, 1891, suffering from acute laryngeal symptoms. The mother stated that she had been ill three weeks, and that the difficulty of breathing had gradually increased from the onset. The little patient appeared greatly distressed, and the breathing was rapid and attended with a loud crowing noise. No tender spot or swelling of the neck could be detected. The throat was clean, the voice clear, and the resonance of the chest normal. The temperature during the day was not much elevated, but at night it reached 101° or 102°. She constantly sat up in bed with her head inclined a little forwards. In forty-eight hours after admission the symptoms dangerously increased, and there was marked recession of the thoracic walls during inspiration, so that tracheotomy was performed without delay. A free incision was made at the lower part of the neck and the structures divided in the direction of the trachea. Very severe hæmorrhage occurred and several vessels were clamped with pressure forceps. When dividing the deep structures over the tube the wound was suddenly filled with thick pus, and about four ounces rapidly escaped. The incision was most carefully cleansed and the hæmorrhage arrested, and as the breathing was still unrelieved the trachea was opened and a tube inserted. After a few hours the little patient rallied and the respiration became tranquil. Free suppuration continued for two weeks and escaped around the tube. It then slowly subsided, and at the end of six weeks the child was convalescent and the wound healed.

Remarks. Before the operation the little patient was carefully watched, and the neck scrutinized over and over again and compared with the necks of other children of the same age, but no change could be detected. An effort was made both with the stethoscope and the hand to determine the seat of the disorder, but it is my experience that physical examination of this kind is seldom reliable, and in young children it is especially uncertain if the noisy respiration can be heard more loudly, or the thrilling felt more distinctly, at the place of constriction than at any other part of the respiratory tube. The entire absence of hoarseness, however, certainly indicated that the obstruction did not arise from laryngeal inflammation. The disease was not an ordinary abscess of the connective tissue of the pharynx, or a deep suppuration connected with spinal caries, for the act of deglutition was not involved, the glands below the jaw were not enlarged, and there was no swelling of the throat or fauces; moreover, all the movements of the head were performed with ease, and the neck was free from tenderness. Fortunately, the latent cause of the disorder was accidentally reached during the operation. The incision was commenced lower down than usual in the neck, as the symptoms were considered to be associated with a disturbance quite external to the larynx

and pharynx. It is my opinion that this deep purulent accumulation had a glandular origin within the chest, and that the trachea had been slowly compressed during its formation.

Dr. ELLIS, in reference to the possible cause in Mr. Milligan's case, remarked that though the statements of patients were not to be relied upon implicitly they were sometimes right. He mentioned the case of a patient who had applied at the Newcastle-on-Tyne Throat and Ear Hospital, and persistently declared that what he (Dr. Ellis) took to be a hyperæsthetic condition of the throat was due to her having partly swallowed a fish bone. He was unable to detect any trace of the bone, but she continued to tease him about it. At last as the tonsil began to swell it was removed, and his colleague, Dr. Stainthorpe, having cut it open, found the long-lost fish bone firmly embedded in its substance. I was evidently the bone of a plaice, and nearly an inch long.

Dr. DUNDAS GRANT, in reference to Dr. Milligan's case, observed that it was interesting in that the source of abscesses of the front of the neck could often only be made out by careful laryngoscopic examination. He referred to a case of his own in which there was a swelling at the side of the larynx, the exact connection of which with the larynx was rather difficult to make out. It was obviously of an inflammatory character. On laryngoscopical examination he found one of the arytenoid cartilages was considerably hampered in its movements, and there was a good deal of swelling about the crico-arytenoid joint resembling primary perichondritis. He applied cold by means of Leiter's coil, and prescribed rest and quiet. In a few days the pain and discomfort disappeared, and in about a week the mobility of the arytenoid cartilage had to a great extent returned. If one had not examined this case laryngoscopically one would not have thought it of sufficient importance to enjoin complete rest, and to prevent all exposure, and particularly to order rest for the larynx, so far as the use of the voice was concerned. Dr. Ward Cousins' case was one which raised a number of speculations. He commended his courage in not risking a definite opinion as to where the pus came from. He had himself seen cases, *post-mortem*, where the source had been discovered in the most unexpected places. In one such case it had extended from the ear. He asked whether the stridor was distinctly laryngeal or whether it was of the croaking character, such as would be likely to be caused by pressure on the trachea; also whether there were violent excursions of the larynx. He pointed out that when the seat of the obstruction was in the larynx then the latter was usually pushed up and down with respiration. When, on the other hand, it was lower down the larynx remained stationary Personally, he had been unable to make out whether this rule was absolute, and he asked whether the case threw any light upon the question. He admitted the possibility of the pus coming, as suggested, from the chest, pushing its way beneath the layer of cervical fascia which was attached to the cricoid cartilage, which would be cut through in performing tracheotomy in the situation described.

Dr. PEGLER asked if there were no redness, swelling, or any signs whatever, indicating the presence of an abscess? He said the case recalled to his mind one of deep abscess of the neck of considerable interest

which he had seen in the country a short time ago in consultation with Dr. Handford, of Nottingham. After suffering a week from simple acute pharyngitis, the patient, a male, aged twenty-five, complained of pain and tenderness to the right of the middle line about the level of the thyroid isthmus, there being also redness and slight glandular enlargement there. He was confined to bed, and swallowing became extremely difficult and painful, till only a very small quantity of liquid could be taken slowly. There seemed good reason to fear involvement of the trachea, and a necessity for having to perform tracheotomy at any time. Examination by the laryngoscope and for retro-pharyngeal abscess gave negative results. Two or three days before the termination of the acute symptoms the sufferings of the patient were considerably aggravated by the constant necessity for hawking phlegm and mucus, with fear of being choked, till one night, a fortnight from the commencement of the illness, a quantity of pus was suddenly ejected by the mouth. It was evident that an abscess had discharged into the œsophagus. Complete relief resulted, and the patient made a good recovery.

Mr. MILLIGAN, in reply, admitted that he sometimes ignored patients' statements, as they were frequently so unreliable. With reference to the necessity for a laryngoscopic examination, he said he did not think he would have thought of examining the throat had the patient not applied at a throat hospital. He agreed, however, that it ought to be a routine practice in every case of obscure swelling in the neck to examine with the aryngoscope.

Dr. COUSINS, in reply, repeated that there was an entire absence of any bogginess or swelling in spite of the most careful scrutiny for any such indication in the shape of an enlarged gland, a tender spot, redness, or anything of the kind. It was that very absence that made him feel that he had to do with something very unusual, indeed he feared that the pressure might be too low for him to reach by tracheotomy. He did not rely very much on the value of physical examination in very young children, nor did he attach much importance to the greater or lesser mobility of the larynx. At the same time he always examined very carefully with the stethoscope and with the hand, but there was nothing in the physical signs to indicate in the slightest degree what was the nature of the case.

In reply to the President, he said that there was retraction of the ribs during inspiration, but that of course would occur in any case of serious obstruction to inspiration. The temperature was 101° at night, but the child was not long enough under observation for him to have been enabled to draw any conclusion from the thermometric chart.

Dr. SANDFORD.—*Two Cases of Glosso-labio-laryngeal Paralysis.*

I venture to bring the following two cases of glosso-labio-laryngeal paralysis before the Association, partly in the hope that they may prove of some interest in themselves, but mainly with a view that, if the Fellows will be so kind as to give some of the results of their experience in similar cases, much interesting and instructive information may be elicited.

My first case is one of bulbar paralysis. The patient, a farmer, aged forty-six, a well-built man, apparently in perfect health, leading an active,

out-of-door life, with absolutely healthy surroundings, and no specific history, consulted me on August 8th, 1891. He stated that some twelve months since he had noticed his "speech becoming thick," his "lips getting stiff," and a slight "hang" in swallowing. Of late all these symptoms had become more marked, and occasionally fluids had, on attempting to swallow them, returned through the nostrils. At present his pronunciation is almost unintelligible, his lips moving slowly, and with difficulty. His tongue can be protruded in the median line as far as the lips, but is quite incapable of any lateral or vertical movement. The mucous membrane is greatly puckered and covered with a dry, brown fur. The patient is quite cheerful in manner, and is in perfect health in every way, with excellent appetite and digestion, both pulse and respiration being normal, but he cannot swallow solid food. His sight and hearing are acute. There is no optic neuritis, and no evidence of further paralytic or ataxic symptoms. He states that he has lost flesh considerably, his present weight being eleven and a half stone. The urine contains quantities of sugar. The symptoms, of course, indicate lesion of an extremely limited portion of the floor of the fourth ventricle. It would be interesting to learn the opinion of those present as to the probable pathological condition, results of treatment, etc. In the fulness of time, I daresay, I shall have an opportunity of bringing under your notice the results of *post-mortem* examination.

My second case is one of unilateral glosso-pharyngo-laryngeal paralysis, the result of injury. The patient, T. K., aged twenty-seven years, was brought to me by Dr. Curran, of Killeagh, suffering from extreme hoarseness and pains in the neck. I found his left vocal cord completely paralysed; the soft palate was, on retraction, drawn to the right side; the tongue was on protrusion deflected to the left, its movement being otherwise perfect; the lips were slightly immobile, the patient being unable to whistle. The head was turned to the right front, the anterior margin of the left sterno-mastoid being flaccid, and some of its muscular fibres having apparently been ruptured. Any concussion, as in jumping or sudden turn of the head, caused severe pain in the back of the head and neck. He stated that two months previously he was leading a young horse, which suddenly reared and bolted, giving him a sharp twist round, and throwing him violently to the ground. He was carried into a house, and given something to drink, a portion of which, on his attempting to swallow, returned through the nostrils. From time to time he had coughed up small quantities of blood.

He was admitted to hospital and put on iodide of potash, with nux vomica, etc., the constant current being applied regularly for some time. The pains, etc., have completely disappeared, and he has returned to work, expressing himself as feeling quite well in every respect except for the hoarseness and difficulty in swallowing solid food.

The paralysis remains quite unchanged. The symptoms must, I should think, have been due to fracture through the foramen lacerum, or to injury by sudden violent extension of the seventh, ninth, tenth, eleventh, and twelfth nerves.

The PRESIDENT, in allusion to the second case, mentioned that of a

young naval officer who had entirely lost the voice after a blow on the larynx. When he examined him he found there was immobility of one vocal cord, and he took it to be a case of primary inflammation from injury to the crico-arytenoid articulation. He recovered under enforced and absolute rest of the voice and the application of constant cold by means of Leiter's coil. In Dr. Sandford's case there seemed to have been a wrench, involving probably some injury to a nerve.

Dr. GRANT asked what was the condition of the tongue.

Dr. SANDFORD said it was deflected to the left side.

Dr. DUNDAS GRANT remarked that the symptoms in the second case differed to some extent from those of bulbar paralysis, and they appeared to be limited to the distribution of the spinal accessory nerve. There was paralysis of one sterno-mastoid, a muscle which was mainly supplied by that nerve, and the laryngeal motor nerves were derived from the accessory nerve to the vagus. In bulbar paralysis properly so called the laryngoscopic symptoms were usually bilateral, and the difficulty was either the production of voice or the respiration. He referred to one very peculiar case, in which the patient was unable to achieve anything in the nature of a cough because his laryngeal apparatus did not permit of the momentary closure of the glottis essential to this effort. In this case fortunately there was paralysis of the adductors as well as the abductors, or tracheotomy would have been necessary. In the second case the probabilities of recovery were slight indeed if after a little time the effusion which had taken place did not clear up.

Dr. STOKER mentioned a case of peripheral paralysis in the person of a gentleman between seventy and eighty years of age. The laryngeal troubles in his case were, as Dr. Grant had observed, bilateral. He had, however, no difficulty in respiration, though he had great difficulty in articulation. This did not arise from any want of power in the vocal cords, but from paresis of the muscles of the lips. He had a good deal of anæsthesia about the larynx, and had to eat with the greatest care to avoid choking. He could cough very satisfactorily, as he himself could testify, for the cough had often kept him awake at nights, he being in charge of the patient.

Mr. V. H. WYATT WINGRAVE.—*Some Points concerning the Lingual Tonsil, bearing upon a Regional Nomenclature of the Tongue.*

The absence of clear and definite terms in describing the different regions of the tongue has, doubtless, been observed by many of you. To speak of the "dorsum," the "root," the "sides," etc., is a very ambiguous method of localization. In the course of some histological and pathological observations connected with the tongue, specially directed to a region so interesting to laryngologists—the posterior third—a probable solution presented itself in the "sulcus terminalis." The parts in front of and behind this line are distinctly different, in structure, in function, in nerve supply, in development, and pathologically.

This line, the "sulcus terminalis," for all practical purposes, corresponds with the V line of circumvallate papillæ, which stand out like a series of martello towers guarding a region sacred to the laryngologist.

The sulcus may not always be visible, but the papillæ are, unless destroyed by disease. At the point of the V is the so-called foramen cæcum, or the opening of the thyro-lingual duct, occasionally the seat of cysts, and always permeable to a bristle for a greater or less distance.

A glance at the development of their parts will help us considerably.

The tongue is formed in two divisions, one a solitary median mass, known as the "tuberculum impar," situated in the angular space between the first and second visceral arches; the other and posterior one arises from the junction of the second and third arches just behind the tubercle, and which are at first separated by a forked elevation of the embryo's pharynx, known as the "furcula," but which uniting form the so-called base of the tongue, pushed the furcula backwards; this becomes developed into the epiglottis, the ary-epiglottic folds and the arytenoid cartilages, whilst the median groove becomes the entrance to the larynx. Between the furcula and the tubercle is the "sinus arcuatus," into which opens the duct of the thyroid body; these eventually become the sulcus terminalis and foramen cæcum respectively.

The second arch becomes the anterior faucial pillar, whilst in the cleft behind it, is developed the faucial tonsil. The posterior pillar is subsequently formed from the palatine outgrowth of the maxillary process and not from the third arch. It will thus be seen that the two portions of the tongue have different developmental origins.

With regard to the structure, the contrast is striking even to the naked eye. In front of the sulcus are found conical and filiform papillæ with a few fungiform aud circumvallate, whilst along the sides are scattered a few mucous and albuminous glands. But behind it we find something totally different.

First, there are the "lingual tonsils," clusters of lymphoid tissue with crypts or lacunæ lined with ciliated and stratified epithelium. This is an interesting feature, and to which I would draw your attention, as I am not aware of ciliated crypts ever having been previously noticed. They are not found in the faucial tonsils, whose crypts are lined with much denser cells than the lingual. Next we notice the thyro—or sometimes called the hyo-lingual duct—lined with stratified columnar cells; and on either side, scattered irregularly, but in dense masses, are the mucous and albuminous glands of Salter and Henle.

The nerve supply is equally defined, for, whilst the anterior region has its afferent nerve in the fifth, the posterior part is supplied by the glosso-pharyngeal.

With regard to function, apart from the glandular suggestions, it is generally admitted that the true sense of taste, especially sensation of bitter, is located in the glosso-pharyngeal region, whilst the lingual gustatory is only responsible for sweet and ordinary sensations, *e.g.*, heat, cold, acids, &c. This is illustrated by the action of an Indian plant known as the "gymnema sylvestre," which destroys the appreciation of bitter and sweet taste only, and can easily be demonstrated by the application of electrodes to the tongue.

Pathologically, we find a marked contrast, for in the posterior half occur diseases with which the anterior is never affected, such as varicose

veins, enlarged lingual tonsil, and other troubles arising in the lymphoid tissue. The ravages of lupus, tubercle, syphilis, also behave very differently in the respective situations.

A highly instructive and illustrative case is recorded in Vol. XX. of the "Transactions of the Pathological Society," in which a child died asphyxiated soon after birth, due to a tumour obstructing the glottis, which proved to be simply an enormous hypertrophy of the normal structure of the posterior portion of the tongue only, the anterior remaining healthy.

Finally, we have the different relative positions. When the tongue is passive, that part behind the sulcus is in the same plane as the anterior faucial pillars, whilst in deglutition it becomes wholly pharyngeal; therefore, may it not be suggested that all that portion of the tongue which is anterior to the sulcus or V line should henceforth be called "oro-glossus"; that part behind it to be described as the "pharyngo-glossus"?

A nomenclature which enables us to definitely localize the particular region of the tongue in question is undoubtedly required, and these few remarks are merely suggestive of a possible way out of the difficulty.

The PRESIDENT thanked Mr. Wingrave for his very interesting communication, which was of much more practical importance than perhaps might at first appear.

Mr. WYATT WINGRAVE also made some remarks on *Some Characteristics of Laryngeal and Pharyngeal Epitheliomata*, illustrated by microscopic specimens.

The preparations illustrate a feature of the stratified form of epithelioma, which I have so frequently observed in these situations as to deem them worthy of your attention. The cells present a beautifully marked crenation at their borders, similar to the "prickle cells" of the malpighian layer of the epiderm, giving a "cogwheel" appearance. They are difficult of demonstration by the ordinary methods of staining, but are readily shown by passing the section through Gramm's solution of iodine after the hæmatoxylene.

It may be suggested that this peculiarity is due either to the rapidity of their growth, the specially moist conditions of their situation, or to the physical effects of the reagents employed. Whichever may be the true interpretation, it is a feature probably possessing diagnostic value.

Mr. WINGRAVE further demonstrated the following microscopic specimens, etc.: 1. *Lingual Tonsil.* 2. *Epitheliomata.* 3. *Membranous Laryngitis* (recent specimen from a case of Mr. Jakins).

(1) *Hypertrophy of the "Lingual Tonsil."*

This specimen was from a lingual tonsil removed by Dr. Dundas Grant from a woman aged thirty, and showed the crypts lined by well-defined columnar ciliated cells. In some of the depressions the cilia had disappeared, and in the more superficial part of the crypt were replaced by ordinary stratified epithelium. This case well illustrated

the persistance of a fœtal condition, for it is extremely rare to find the lacunæ lined by ciliated bodies so late in life. Mr. Wingrave was not aware that attention had previously been drawn to this histological feature.

SPECIAL DISCUSSION.

The Necessity for Systematic Voice Training in Public Speakers.

Opened by Dr. SANDFORD.

Mr. President and Gentlemen,—I feel greatly honoured indeed in being asked to open a discussion upon this most important subject. I had only intended reading a "case illustrating the importance of systematic voice training, and the neglect which this subject has too commonly received," and was quite alarmed when I received a copy of the programme of this meeting yesterday to find the formidable task allotted to me. However, I took courage when I saw the names of those who will take part in discussing the subject, for I knew that our President, Dr. Dundas Grant and Dr. Farquhar Matheson are good for any amount of interesting information, and they will amply make up for my shortcomings.

The case I have referred to is an extremely commonplace one, indeed, so much so, that I should on this ground apologize for bringing it before you, but that herein I believe lies its chief importance. I am quite sure that similar cases are an everyday experience with most of our members, and it is with a view to remove, if possible, one source of so much practice that I would ask your kind forbearance while briefly sketching its principal features.

The Rev. M. A., a clergyman recently ordained, of uncommonly vigorous and robust frame, consulted me in December last, stating that he was quite unable to discharge his public duties from a constant feeling of weakness—almost approaching to pain—in his throat, and frequent hoarseness, his voice suddenly "breaking," and the effort to continue speaking being painful and ineffectual.

He had a few months previously entered on his first curacy with, as he said, a "tremendous voice," but without any training. The church is a fairly large one, and the service is intoned. From the first Sunday he felt very tired, and his voice quite hoarse after the day's work, but he continued for a month or two, hoping that this would "wear off." He found on the contrary that he was getting steadily worse.

At last, owing to unusual pressure of work, aggravated by a slight attack of influenza, he broke down completely, even ordinary conversation being distressing and disagreeable from the croakiness of his voice; and though he could still emit a few clear notes in a loud voice at high tension, this could not be sustained for any length of time.

I found his pharynx and larynx extremely hyperæmic, with considerable follicular hypertrophy of the pharyngeal mucous membrane and the tonsils. The cords were slack, with an utter want of tone.

Having relieved the local symptoms by the use of the usual sprays, etc., as well as by the application of the galvano-cautery to the enlarged follicles, I advised the patient before resuming work to seek instruction

in the proper use of his exceptionally powerful vocal apparatus. He therefore placed himself for a month under the guidance of Mr. Behnke, whose scientific method of teaching, and admirable system for bringing out the voice, I have had an opportunity of observing.

The result was eminently satisfactory. A few weeks after returning home Mr. A. wrote that he himself and many members of his congregation were quite astonished at the change in his voice, and at the ease with which he could fill the church while speaking in his natural key. He felt quite fresh after his Sunday work, and an utter absence of the voicelessness and general physical fatigue previously resulting from the sustained effort. I saw him a few days since, and he told me that he continues to improve day by day, and finds life quite a different thing from what it had been a few months previously.

I believe that this case is typical of many, and that every day young men are launched from academic into public life, crammed it may be with useful information and brimming with original ideas, but handicapped by never having had their "mouths made." They have never been trained to use their voice skilfully, and when the pressure comes, the vocal organs break down under the strain. Public speaking is as different from ordinary conversation as rowing is from mere paddling, or as racing is from walking, and special physical training is as necessary in one case as in the other. The tongue may be as "a sharp sword," but even this latter is a comparatively feeble weapon under the sway of one untrained in its use. In the case of the untrained voice, the mischief does not stop at mere feebleness. Many chronic and wearisome throat troubles are due directly or indirectly to (or at least are kept up by) the constant strain of injudiciously used muscles. This influence is of course greatly aggravated in our damp, relaxing, rheumatic climate by atmospheric conditions. No one who has not experienced it can realize the depressing effect, both mental and physical, produced in the individual by the fatigue and vague ever-present laryngeal pain resulting from unduly strained muscles.

I am quite sure that some suggestion from this influential Association would have considerable weight in impressing upon educational governing bodies the importance of encouraging the study of voice cultivation. Attention to the subject would, I am convinced, diminish at least one fruitful source of throat trouble, and prove a boon to future public speakers, more especially in the divinity and other schools, where students are presumably prepared for a life in which the art of speaking in public is one of the most important elements in their education.

A special course in scientific vocalization, apart from elocutionary or other rhetorical embellishments, would be invaluable to most men preparing for public life, and a recommendation to that effect from this Association would at least bear the stamp of sincerity and unselfishness, for I have no doubt that such a course of instruction would deprive us of many patients.

Dr. DAVIES, of Newport.—*Stammering induced by Whooping Cough.*

My eldest son, Howard, though backward in talking as a baby, never

had any speech difficulty until he had, during his fourth year, a severe attack of whooping cough attended by considerable pyrexia.

As there was no hereditary tendency in either parent, I paid very little attention to it, beyond correcting him, hoping that as he gained strength and grew older he would improve; but, instead of growing out of it, the inclination to stammering, slight at first, became a confirmed habit, and he gradually became worse until the time when he commenced to learn. The little difficulty had then grown into a very serious obstacle in the way of his studies, and was assuming such a serious aspect that I began to make enquiries among my medical friends for someone who could take the child in hand and treat him rationally, scientifically, and free from empiricism. The answers which I almost invariably received were, that the treatment of stammering had been practically ignored by the profession, and was mainly in the hands of quacks. Although determined not to patronize empiricism, I was almost giving it up in despair, when I quite accidentally heard of Mr. Lennox Browne as having operated on a little boy at Frome, and whom Mr. Behnke had subsequently cured.

I at once sent Howard to Mr. Lennox Browne, and he very kindly performed an operation on his throat (removal of adenoids and a shortening of a very relaxed uvula), and advised my sending him to Mr. Behnke for at least three months. He was almost immediately sent, and commenced his residence just after his ninth birthday.

The first thing which Mr. and Mrs. Behnke appeared to do, was to inspire the child with confidence in himself and in his teachers; to make him feel quite at home and perfectly happy.

The next thing, as far as I could note, was to ascertain exactly, or as nearly as possible, where the defect lay, and its probable cause. They immediately discovered that the diaphragm was exceedingly weak, and that Howard had acquired a very vicious habit of talking during inspirations, and I may say in passing that this was an attempt of his own to cure himself under home teaching.

The moral effect of knowing that he *could* speak like other boys combined with Mrs. Behnke's almost magical influence over him, together with the diaphragmatic drill and the placing all the other chest muscles at rest in the recumbent position, was so pronounced that in a few days, while lying down, he was able to go through his vocal exercises and could read easy books with scarcely any stammering or hesitation. This improvement was the more remarkable, as for years before he went under treatment, the moment he commenced reading aloud or reciting, the stammering and facial contortions were most painful and distressing to witness, and undoubtedly had a very bad moral effect upon him; from being naturally high-spirited and inclined to be despotic he was becoming shy and timid, and from being vivacious and talkative was becoming morose and silent. But under Mrs. Behnke's care Howard very soon acquired such confidence in his own powers of speech as to be able to take messages and do some shopping for her, which by the way was part of the treatment, and altogether assumed a much more manly, or shall I say boyish appearance.

At the expiration of the three months I am pleased to say that Howard

was practically cured. He could speak, read and recite with ease, and only occasionally hesitated or came to grief slightly by carelessness in carrying out his instructions. For some time after his return home, the diaphragmatic drill and vocal exercises were most successfully continued by his mother, who had been specially instructed therein.

On one or two occasions when out of health, and during and after an attack of influenza he appeared to lose ground, but soon picked up again with care and a little practice in the exercises.

Since my attention has been drawn to stammering by my son having been a sufferer, I have heard of and come across several cases which have originated during an attack of whooping cough. Can this possible connection between the two diseases be due to over-distension and consequent partial paralysis of the diaphragm? Paralysis of the bladder from over-distension is too well known and recognized to be disputed, and the over-distension and consequent permanent weakness of the abdominal muscles in pregnancy is also a too common and unfortunate occurrence to require any comment. Is it unreasonable to suppose that the same thing takes place in some of these severe cases of whooping cough in children whose muscles are soft and flabby?

I should be very much interested to know if other of my medical *confrères* have observed this relationship between the two diseases.

If it can be proved that this hypothesis is impossible and untenable, can the stammering be caused by some slight brain lesion induced by the violence of the cough? or may not its severity have some injurious effect upon the nervous system through the emotions?

These cases are so numerous, so distressing, and so detrimental to the success in life of many who are otherwise healthy, capable of, and anxious to take their part in the battle of life, that I hope the disease and its curability will be recognized by the medical profession, so that the mental and physical sufferings of these cases, as well as their social disabilities, may be brought prominently before the benevolent and the philanthropic of our country. Then, I trust that the day may not be very far distant when we shall have a home or homes for their special treatment. [This little boy was then introduced to the Society, and created a great impression, not only by the absence of any speech impediment, but by the clearness of his enunciation of every syllable, and by the resonance and carrying power of his voice.]

Dr. FARQUHAR MATHESON, in his remarks, stated that in the training of the voice the early recognition of impediments or of abnormal conditions of the vocal mechanism, from their great importance and prevalence, demanded the full attention of an association like this. The subject, hitherto, has been altogether overlooked and neglected by the medical profession, and has been considered scarcely within the jurisdiction of the surgeon or physiologist. The development and training of the vocal organs, whether imperfect or normal, have hitherto almost exclusively been undertaken by teachers of reading, elocution and music. Although many of these gentlemen have done excellent work in this direction and are highly accomplished and successful in their art, it is clear that their training and education do not qualify them to deal with

that very numerous class of voice imperfections arising from obstructions or impediments in the upper air-passages or malformation of the throat, palate, etc. This latter class of cases can only be successfully dealt with and improved by the skilful surgeon in the first place, and in a later stage by the assistance and co-operation of the elocutionist. Gentlemen like himself, who came daily in contact with numerous cases of diseases of the nose and pharynx, are constantly impressed with the deplorable imperfections of voice resulting from obstructions in these cavities, which at an early stage are quite amenable to skilful treatment. Enlargements of the turbinated bodies and deviation of the nasal septum were the most frequent causes. Whilst listening lately to a debate in the House of Commons he could not help observing the loss of force and attention which one or two of the speakers sustained in the delivery of otherwise capital addresses, through some impediment in the nasal passages, which could in their earlier days, or even now he thought, be easily rectified. But being somewhat misled by the title of the discussion he was not prepared to enter into details. He, however, again recommended the subject, as one of much interest and importance, to the notice of their Society.

Dr. Matheson offered some remarks on a collateral subject, to which he had given some attention, viz., stammering. Although he had perused almost the whole literature of the subject, he was bound to say that no full and satisfactory explanation of the causes of this malady has been given by any author, and few of the numerous systems advocated by different teachers for the cure of stammering are based upon sound and rational principles. In studying the conditions as regards health and the clinical history of every case of stammering, it will be observed that the principal feature presented is a highly nervous disposition—excitable, timid, and easily impressed. In this respect the malady has many points in common with many other nervous diseases, such as epilepsy, chorea, and even infantile rheumatism. In addition to this neurotic, or constitutional predisposition, there is almost in every case of stammering a second or exciting cause. These are very numerous, and vary in almost every case, and may be a sudden fright, a fall on the head, the irritation of teething, pharyngeal or gastric inflammations, diphtheria, chorea, etc., causing involuntary and spasmodic action of certain muscles over which the child has lost control. Whooping cough, especially if associated with measles, was a frequent exciting cause. But it has been ascertained beyond question from actual examination of stammerers that the principal factor in the causation of the disease is the existence of adenoid growths in the naso-pharynx, and obstructions and irregularities in the nasal cavities. These conditions are responsible for at least fifty per cent. of the cases we meet with, and the statement is proven and supported by the fact that upon removal of the nasal obstructions and growths the stammering is immediately relieved and improved, and in some cases cured, even without the aid of a teacher. It is also a fact that many stammerers suffer more or less from deafness. The subject and the views expressed still demanded further study and attention by the physiologist and surgeon, and with the co-operation of the skilled teacher it could be confidently hoped that many

sufferers from stammering and other voice defects would be rescued from a painful and distressing imperfection.

Dr. ALTHAUS expressed the great interest he felt in the subject of the papers that had been read, and in the demonstration which they had just witnessed. It was really wonderful to hear the lad speak as he had done before such a large assembly. He had for some years past been led to form a very high opinion of the physiological basis and practical value of Mr. Behnke's method. It was not so much a method of training certain laryngeal and other muscles as a method for training a definite nerve centre, viz., that of speech. He had been confirmed in that view by noticing that an efficient training of this nerve centre tended to exert a beneficial influence upon other nerve centres. Certainly the cases he had sent to Mr. Behnke were not cases of simple stammering, but of stammering combined with mental instability and a general deficiency of brain power. One was a young man, twenty-four years of age, sent to Mr. Behnke some eighteen months ago, almost as a forlorn hope. He was the son of a gentleman of limited means, and had had an unfortunate career at school and college, being ridiculed by everybody he met. At that time he gave the impression to a casual observer almost of imbecility. Still, there was something to work upon. He could read and write tolerably well, and had a smattering of Greek and Latin. The question was whether he could be trained sufficiently to earn his living. Not only was there a marked improvement in articulation after six months of Mr. Behnke's treatment, but the patient had acquired a different aspect, was much more intelligent than before, and had lost all those little absurdities and mannerisms which formerly told so much against him. He had eventually been able to accept a situation as teacher, the duties of which he was reported to be discharging very creditably. The improvement all the way round in the case just mentioned could not be explained if we looked upon Mr. Behnke's method as one for training muscles only. It did much more than that, and the results of training of the nerve centres in this case had surpassed his expectations. Dr. Althaus also referred to another case, not quite so severe, in a boy aged nine, observing in parenthesis that children were always easier to train than adults. This lad had always shown a considerable amount of mental deficiency. The way in which he answered questions and looked vacantly round him when spoken to, and the awkwardness shown in spelling or writing, were those of a not very advanced child of five or six. He had an opportunity of seeing that boy again, after he had been six weeks with Mr. Behnke, and the result was marvellous. There was not only an immense improvement in articulation, but the whole aspect of the case had been changed. There was a long neurotic history in this patient's family, which made the case a particularly difficult one; and the fact that in so short a time such a radical change should have taken place, spoke volumes for the efficiency of the method of training to which he had been submitted. Dr. Althaus expressed his pleasure that the subject had been brought forward at this Association, and he would like to impress upon them the practical value of Mr. Behnke's system, not only in cases of ordinary stammering, but also in those in which stammering was only one of the symptoms of general nerve disturbance and instability.

Dr. DUNDAS GRANT said he took part in this discussion chiefly because he wished to bring before the Society a case which they had already seen last year. After one of their meetings in the past year they had had the privilege of listening to an address on stammering by Mr. Behnke. On that occasion he (Dr. Grant) had selected at hazard from among his out-patients a case, totally unknown and unexpected, of severe stammering; as severe a case as could well be met with. The patient was altogether incapacitated from any occupation involving oral communication. He "sprang" this man on Mr. Behnke, who at once went through his usual probatory examination, with a result which was astonishing to them at the time. He felt very strongly that it would be a pity that such a discussion should be allowed to fall to the ground for want of the ventilation such an association as theirs could give it. It was by no means a merely medical question, nor a question affecting only throat specialists, though it was one, nevertheless, which at a meeting of throat specialists could be most properly discussed.

In their dealings with the outside world they came across glaring cases in which the want of training for public speaking made itself apparent. It was a political, a social, and even a theological question. At the House of Commons, or at its humble analogue the Codgers' Hall, one could not but be struck by the fact that some speakers there often utterly missed their points from the very ineffective way in which the matter was brought forward. Others again, with very little to say, managed to score, owing to their attractive manner of delivery. In this respect their Irish brethren ran away ahead of them all by the fascinating manner in which they put forward their ideas. The English came much behind, and he would warn them that if they wished to keep whatever political supremacy they might be entitled to, it was important that their speakers should be armed with vocal qualities which would enable them to meet the eloquent advocates of Home Rule or other measures on equal or advantageous terms. It was essential to the welfare of the community and the race that certain questions should be thrashed out upon their merits and not condemned—practically unheard—on account of the vocal defects of those who were charged to defend them. The same remark would apply to all the liberal professions. Those who attend places of worship were often very much shocked by the feeble attempts at elocution to which they were constrained to listen. The Church would have to bestir itself, and would have to make its ministers take lessons in elocution before entrusting them to advise to better modes of living. Until it did so, "clergyman's sore throat" would not disappear, and the Church would not realise the amount of good influence of which it was capable.

Passing on to discuss the causation of stammering, he said the causes were so numerous that they might be found wherever one looked, whether locally in the throat and nose, or constitutionally in the general health and the nervous and other systems.

The statistics brought forward by Dr. Matheson were certainly interesting, but, in order to appreciate their full significance, it was necessary they should know the frequency of adenoid vegetations in stammerers compared with school children generally, and the frequency with which

adenoids were accompanied by stammering. Then they would be in a position to decide whether the connection was accidental or essential. In reference to the neurotic element, he pointed out that there was a certain cerebral irritability capable of inhibiting the centres for speech, just as the same cerebral irritability might inhibit that centre which, in its turn, inhibited micturition. The great object in view of this was to divert the surplus or irregular cerebral energy into another area. Mr. Behnke's was certainly a useful practical classification. He applies the diaphragm drill tentatively in all cases, and produces an improvement in a large proportion almost immediately. These cases he classifies apart, and gives a favourable prognosis as to improvement under respiratory gymnastics. At the same time Dr. Grant did not hesitate to affirm that there was something more in this system of training than a mere mechanical working of the diaphragm. He did not believe that it was possible for everybody to take up this plan of treatment and work it as Mr. Behnke did. There was an individuality about Mr. Behnke, and it was to be hoped that he would not only provide for the relief of individuals, but would take care to train up around him teachers capable of carrying on his good work for the benefit of sufferers at large. He could evidently not treat all the stammerers in existence, and he thought his system ought to be extended and perpetuated.

[The patient, to whom Dr. Grant had alluded, was then brought before the Society, and was asked to recite aloud and to sing musical notes. He spoke in a measured tone, free from any suspicion of stuttering or hesitation, and in reply to a question, he said that since the course of training his singing voice had markedly increased in volume. Dr. Grant pointed out also that his general physique had improved *pari passu*.]

Mr. EMIL BEHNKE—Mr. President and Gentlemen,—As you have kindly invited me to take part in this discussion I desire to avail myself of the opportunity for the purpose of once more emphasizing the three chief points upon which we insist in our teaching :—

They are, first, the necessity for medical co-operation ; secondly, the necessity of diaphragmatic drill : and thirdly, the necessity of paying proper attention to the mental aspect of stammering.

I. (*a*) The necessity for medical co-operation is proved anew by a case which is at the present time under the care of my wife, who attends to all lady pupils and young people. It is that of a little boy who was utterly unable to pronounce any vowel without prefixing it with a hard *g*, or a *k*. Thus, instead of saying "I am going out," he would say "Gi gam going gout," etc. Now the elocutionary remedy for this defect consists in exercises for educating the soft palate, and for giving the speaker proper control over it. We found, however, that, in this particular case, the soft palate was so weighted by enlarged tonsils and an elongated uvula that our efforts to enable the little patient to raise it to any considerable extent were fruitless. We therefore communicated with the parents, who took the child to Dr. Greville Macdonald. This gentleman discovered that, in addition to the enlarged tonsils and the elongated uvula, there existed a considerable mass of adenoid vegetations which, extending towards

the Eustachian tubes, were responsible for a certain amount, not exactly of deafness, but of want of power to appreciate the refinements of speech.

The child was operated on accordingly, which not only removed the direct obstacle in our way, but also a source of perpetual irritation, which would undoubtedly have constituted an insuperable bar to the boy's progress. Under these new conditions, however, he quickly responded to teaching, and learned to raise the soft palate smartly, with the result that he is now able to utter his vowels without an abnormal consonantal prefix.

I think you will agree with me that it would be difficult to find a case more strikingly illustrating the necessity for medical co-operation than this.

(*b*) Now, with regard to diaphragmatic drill, it has been suggested that its beneficial effect upon a stammerer's difficulties largely arises from the fact of his attention being thereby diverted from his speech trouble. I have no doubt this is the case to a certain extent; but there is something beyond it. Respiration, although a perfectly automatic process, may be trained and brought, more or less, under the control of the will.

But it is possible to accomplish more difficult things than this. For instance, I have trained myself to get control over the tensors of the membranes of the tympana for the purpose of shaking off a certain amount of deafness which frequently troubles me; and it is on record that Dr. E. Weber caused his heart to stand still after a prolonged course of training for slowing the pulse, and that he very nearly died of the experiment.*

The extent to which control may be obtained over the action of the diaphragm is astonishing, and can only be appreciated by those who have seen obstinate cases under treatment.

(*c*) With regard to the mental aspect of stammering, it has been pointed out to me that the difficulty arises in the cortex of the brain rather than in the medulla. I have always understood that the cortex has to do with language, and the medulla with speech; and stammering is clearly an affection of speech, and not of language. It is not, however, of any practical importance to me as a teacher whether the one theory be right or the other. My great point is this: it is a *sine quâ non* for the teacher to gain not only the confidence, but even the affection, of his pupils, and to acquire the most perfect and absolute control over them, so as to be able to lead them to cultivate habits of calmness and of self-reliance. Failing this, all mechanical exercises will be utterly wasted.

So much for stammering. It should be distinctly understood, however, as my friend and fellow worker, Mr. Lennox Browne, has often insisted, that the same principles underlying the treatment of this defect also underlie the proper training of voices for speaking as well as for singing.

It is hardly necessary for me to call the attention of a medical audience to the obvious fact that the teacher of voice culture is quite

* "De Pulsu resorptione, auditu et tactu," by Dr. Ernst Weber. Leipzig, 1834.

unable to do himself justice while the vocal apparatus of the pupil is not in a normal condition ; but I may, perhaps, mention to you a case in point, which I had recently under my care, and which is instructive as well as amusing. I was consulted by an actor who wished to improve his voice, and I soon discovered that he suffered from a want of nasal resonance, which was, no doubt, caused by some obstruction of the nasal passages. Upon testing him with a lighted match I found that he was unable to blow it out through either nostril, and I advised him to consult a doctor before commencing lessons, which he did accordingly. To my astonishment the doctor ridiculed the idea of there being anything the matter with his nose. But, in spite of my best endeavours, I completely failed to increase the resonance of my pupil's voice, and I urged him once more to consult his medical adviser. The doctor, however, adhered to his first opinion, and I parted with my pupil, feeling that he was wasting his time and money by taking lessons which were perfectly useless. He then went to America, and after his return home gave me a call, when I was struck by the wonderful improvement in his voice, and said to him at once, "Ah ! now you have had your nose operated upon." This greatly astonished him, and he said that he should not have thought I could have immediately discovered that ; but it was a fact. He had consulted a throat specialist in New York, who discovered that his nasal passages were almost choked with vegetations, so much so that it took several sittings to remove them all by means of the galvano-cautery. The effect of this operation was not, of course, immediate ; but after the lapse of some six or eight months, when the mucous membrane had assumed a normal state, the improvement in his voice was simply marvellous.

II. Now with regard to breathing. It is quite clear that the management of the breath is of as much consequence to the voice-user as is the management of the bow to the violin player ; and this management can only be obtained by getting proper control over the diaphragm.

Time will not allow me to enter fully into this subject, but I may relate to you a conversation that took place between a medical practitioner, who was a pupil of mine, and myself. He wanted me to explain to him why I considered diaphragmatic breathing so infinitely superior to clavicular breathing for voice use. I asked his permission to answer his question by giving him a demonstration, and then sat down to the piano, singing a great number of staccato tones, inviting him to watch me very closely, and to discover, if he could, my breathing places. He failed to do so, and was surprised to find, by placing his hand on my abdomen, while repeating the experiment, that I was able to take a short inspiration before *every single tone.* He admitted that such a result would be quite impossible by means of clavicular breathing, and that I had perfectly answered his question.

III. Finally, with regard to the mental aspect. All exercises should be carried on under the direct influence of the mind, and mechanical practice alone will never be satisfactory. This is, however, a vast subject, upon which a large book might easily be written, and I am afraid that I have already taken up far too much of your valuable time.

I will, therefore, conclude by thanking you very sincerely for the

generous support so many of you have kindly extended to me this afternoon, and by also tendering my grateful thanks to the editors of the JOURNAL OF LARYNGOLOGY for the signal honour they conferred upon me, as a non-medical w iter, by devoting a leading article to the consideration of my paper on "Stammering."

Mr. MAYO COLLIER, speaking to the subject of costal *versus* diaphragmatic breathing, pointed out that in the last edition of Mackenzie's "Hygiene of the Vocal Organs" there was a chapter written by himself which had especial reference to the method of breathing related on this occasion by Mr. Behnke. Also in one of the numbers of the JOURNAL OF LARYNGOLOGY they would see that he had endeavoured to prove mathematically that the method of breathing described by their President and Mr. Behnke was not only not the correct one, but was positively incorrect. In the article to which he had referred he pointed out that the old Italian masters taught that one should take in air with a concave stomach. In Greek statues the performance of great efforts was depicted with a hollow abdomen. Moreover, in divers the method was to draw in the abdomen and dilate the chest. He had referred in that article to Mr. Behnke's book and to the practice taught at the Paris Conservatoire by Mandl and others.

Mr. Collier then demonstrated on the blackboard by the aid of the formula $V=\frac{H}{3}\pi r^2$ that the extra breathing space obtained by depressing the diaphragm to its fullest extent was considerably less than that available if the base of the thoracic cone were enlarged to a very slight extent, by contracting only those fibres of the diaphragm which pulled the lower ribs upwards in the proportion of 300 cubic inches to 324. That showed that the teaching of the old Italian masters was right.

The PRESIDENT said Mr. Collier had alluded to clavicular and costal breathing as if they were interchangeable terms, but as a matter of fact they were quite distinct. Diaphragmatic breathing *must* be followed up by costal extension, and this was always taught by Behnke and himself, but it was quite another thing when it became a question of carrying on the costal distension till it led to the raising of the clavicle. When breathing was commenced by depression of the diaphragm, and extended to rib breathing, the fault of elevation of the clavicle was barely suggested, and diaphragmatic drill was indeed a correction of that fault if it existed; but breathing commenced by the method called costal was very apt to lead, and almost always did lead, to elevation of the clavicle, a mechanism which, to quote Morell Mackenzie, "is seldom brought into play, except in the dire struggle for breath when suffocation is impending."*

He did not care a fig for the figures on which Mr. Collier's demonstration was based, and he insisted that the spirometer afforded a much more reliable test of breathing space than any mathematical calculations which were based on a series of unproved and unprovable assumptions. He had employed this test for years with results which had never failed to confirm his views. He asked anyone to try the effect with a spirometer in a pupil taught by Mr. Behnke to use the diaphragm, and one who did not

* "Hygiene of the Vocal Organs," Seventh Edition, 1890, p. 84.

use the abdominal muscles. He confessed that he did not understand Mr. Collier's figures, but he flattered himself he did understand the readings of a spirometer. He mentioned the case of a young man, engaged in evangelical work, who came complaining of weakness of voice. He then spoke in a childish treble. The spirometer gave 200 instead of 260 cubic inches, which was his mean according to Hutchinson's tables. Under diaphragmatic training he acquired a man's voice, which he had never possessed before, and at the same time he gained 60 cubic inches of breathing capacity. This case was but one of many. Another case was that of an old lady with complete loss of voice. This was restored by faradism, and she then underwent training. The respiratory powers were so feeble that she hardly moved the needle of the spirometer, and with every effort only registered 9 cubic inches. After six daily lessons she scaled 90 cubic inches, and held her restored voice. He further related the case of a minor canon of St. Paul's Cathedral, who had a breathing capacity in excess of the normal, but did not know how to economize it, and therefore failed in "attack" of his notes. Under proper treatment he entirely recovered, though he had almost lost his singing voice.

There was a class of cases arising from fatigue of the voice, called by Morell Mackenzie "spasm of the tensors," but better denominated by Prosser James as "stammering of the vocal cords." He remembered two remarkable cases of this in clergymen. The treatment in past days consisted always in faradization and the administration of nerve tonics. They were just such cases as those brought forward by Dr. Sandford. Sometimes the subjects of it could speak with ease in ordinary conversation, but the moment they tried to do duty, control of their voice entirely failed them, resulting in spasmodic treble with intervals of hoarseness. The President had sent one such case, afflicted for years, to Mr. Behnke, and in a very few weeks he was able to preach in Chichester Cathedral, and had since done regular duty. Another was the son of an eminent physiologist, who had to give up ministerial work entirely from failure of his voice. He had been sent abroad, but had never regained his voice. He was then about twenty-seven. Time passed on, and when he was forty years of age he consulted the speaker. In reply to a question as to what were his special voice occupations, he said he lectured on religious history and Hebrew. Curiously enough, he had no difficulty with the Hebrew, but the history tried him terribly. This was explained by the fact that in the latter he stooped a good deal to consult notes as to facts and dates. This was in 1884. He was put under diaphragmatic drill, his breathing at that time being very shallow, and accompanied by much clavicular elevation. As he went on learning, he not only lost all the spasmodic speaking, but developed a singing voice, and later on he came to ask whether he could not go on further for the purpose of advancement in this gift. The President stated that he would be very pleased to see this matter put to the test, and he asked Mr. Collier whether he would submit to that of the spirometer.

Lastly, with relation to this point he denied that the old Italian masters really taught the method which Mr. Collier supposed. Certainly those who were supposed to have their traditions, such as Lamperti and his disciples,

taught that respiration should be commenced by descent of the diaphragm, and this not only for a fuller inflation of the lungs, but for the purpose of steadying and controlling the exit of the air in attack. Mr. Lennox Browne admitted that his was not the system taught at the Paris Conservatoire, and the result was that French voices, as a rule, fell to pieces more quickly than others who adopted the more rational mode of training, and were noted for the obnoxious fault known as *vibrato* or *tremolo*. It was this circumstance that led Mandl to write his well-known treatise, in which he proved to demonstration that fatigue of the voice was mainly due to improper breath management.

The question of stammering was very interesting to him, because, as already stated by Mr. Behnke in his very practical address, there was a great analogy between that condition and the faults of voice in adult life. Some he had alluded to, namely (1), an inefficient filling of the lungs—imperfect bellows power—and (2) a want of economy in emptying the lungs for the purposes of voice—a waste of bellows power. Of those that remained, there were (3) the carrying *up* of the lower register of the voice instead of bringing the upper one *down*; this was quite as frequent a fault in speakers as in singers, and was responsible for what is known as a "hole" in the voice; (4) ignorance of how to use the soft palate, and other conditions leading to deficient resonance; (5) speaking in an unduly loud voice; (6) in an unduly high pitch of the voice; these two were by no means one and the same thing. Lastly, there was an affected manner of speaking, which he ventured to think was peculiar to the clergy, and more especially to the English clergy. It was not common to Nonconformist ministers, and was quite absent in the orations of barristers and lecturers.

All the other faults named, and others which for want of time could not be even mentioned, were responsible not only for much ineffective speaking, but for many diseases of the throat. It was the duty of the throat specialist in these cases, as of any doctor in all other cases, when he had cured the disease, to indicate to his patient how to avoid recurrence, and in the case of the suffering voice-user this could only be done by correction of his faults at the hands of a voice trainer. He (the President) was delighted that this subject had been suggested and so well introduced by Dr. Sandford, and he was more than gratified at the ample testimony given by so many Fellows to the power possessed by his friend and co-author, Mr. Behnke, to supplement the efforts of the doctor. For himself, he could but say that, whereas before he knew Mr. Behnke he was only able, as were others, to give temporary relief to clergymen with sore throats, since he had had the advantage of Mr. Behnke's co-operation, a very large majority of his cases had been permanently cured of their ailments, and their important duties had, therefore, been performed not only with comfort, but with increased efficiency.

Dr. SANDFORD then moved, as a formal resolution, that "It is the "opinion of this Association that insufficient attention has hitherto been "paid to the subject of voice training as a branch of education, especially "as regards preparation for public speaking. Also that in addition to

"increased personal comfort and public advantage to be obtained from "proper voice cultivation, many serious diseases of the vocal cords would "be prevented by methodical training in their use."

This motion was seconded by Dr. DUNDAS GRANT, and carried unanimously.

A vote of thanks was also accorded to Dr. Sandford for having brought the question forward, and to Mr. Behnke for having contributed his valuable remarks to the discussion.

MEETING HELD FRIDAY, JULY 1st, 1892.

MR. LENNOX BROWNE, F.R.C.S. Ed., President, *in the Chair.*

Election of Fellows, presentation of accounts, &c.

The Annual Statement of Accounts was presented, and it was unanimously ordered to be received, adopted, and entered on the Minutes.

DR. GEORGE STOKER, *Hon. Sec. in Account with the* B. L. & R. ASSOCIATION.

DR.		£	s.	d.	CR.		£	s.	d.
1891.	To Balance from last account	63	18	10	1891. Dec. 28	By F. A. Davis for printing and publishing Transactions	50	0	0
June	" Subscriptions	45	3	0	1892. April 1	" Rent of Rooms *re* Meeting 25/3/92	4	4	0
" 9	" Cash received for 41 guests *re* Dinner	15	7	6	"	" Refreshments *re* above	1	7	0
1892. June 30	" Cash for Advertisements in Transactions	13	13	0	" 11	" Expenses of Dinner—Wine	0	13	6
						Servants' gratuities, &c.	1	5	0
					"	" Langham Hotel, for 41 dinners	15	7	6
					"	" " " 5 guests	1	17	6
					May 30	" Mr. Martin—for Secretarial assistance	8	0	0
					"	" Bankers' charges on Scotch and Irish cheques	0	2	4
					June 9	" Petty cash	6	10	0
					" 30	" Re-composing, correcting, and re-printing 40 pages of Transactions of 1891	12	17	6
					"	" Corrections throughout Transactions	3	15	6
					"	" Composing and printing 22 pages of Advertisements	3	13	0
					"	" Commission of 25 per cent. on Advertisements	3	8	3
						Balance in hand	25	1	3
		£138	2	4			£138	2	4

Examined and found correct,

MAYO COLLIER,
FARQUHAR MATHESON, } *Auditors.*
LENNOX BROWNE,

JUNE 30TH, 1892. GEORGE STOKER, *Hon. Sec.*

A Ballot was then taken for the Officers for the ensuing year, and resulted in the election of the following Members :—

President: Dr. SANDFORD (Cork).

Vice-Presidents:

England—Dr. GEORGE STOKER.
Scotland—Dr. J. WALKER DOWNIE (Glasgow).
Ireland—Dr. J. HILLIS (Dublin).

Metropolitan Members of Council:

Dr. BERKELEY.
Mr. LENNOX BROWNE.
Mr. MAYO COLLIER.
Dr. DUNDAS GRANT.
Dr. HARVEY.

Extra Metropolitan:

Dr. WARD COUSINS (Southsea).
Mr. ALGERNON HODSON (Brighton).

Hon. Secretary: Mr. V. H. WYATT WINGRAVE.

Dr. MACINTYRE (Glasgow) read the notes of a case of *Rodent Ulcer, extending from the Face into the Superior Maxillary Bone.*

William Stevenson, aged sixty-two, mechanic, consulted me some time ago about an ulceration of the face, from which he had long suffered. He complained of severe pain and sleeplessness, and was willing to submit to any operative measures, as he had undergone a number without marked benefit. So great was the pain, which was constantly darting to the ear and the frontal and parietal regions, that no rest could be got without the aid of sedatives, locally and constitutionally administered.

On examination, an extensive rodent ulcer of the face was seen, extending outwards and inwards so as to involve the floor of the nose, the inferior turbinated bone of the right side, the greater part of the inferior meatus, and nearly the whole right side of the septum. There was an opening on the side of the nostril, between it and the face, where previous destruction had taken place after operation. The whole parts were so diseased and inflamed that it was difficult to make out the full extent of the lesion. The superior maxilla itself was destroyed for at least an inch in the alveolar process. There was no glandular enlargement. The margins of the ulcer were very much thickened and infiltrated, and along the lines of incision of the previous operations there was every indication of more rapid extension of the disease than had hitherto been experienced.

He states that ten years ago, while employed at his occupation, some drops of oil from a lamp burning above him fell upon the side of his face. This left a slight irritation and break in the tissues, which shortly afterwards healed up, but left a swelling the size of a pin-head. After a few months this broke out, and from time to time gave him great pain and trouble, as it would not heal. It was situated just at the angle between

the nostril and upper lip. Two years after the injury he consulted several medical men, who ultimately referred him to the hospital, and, after consultation with the dispensary surgeons at the Glasgow Royal Infirmary, he was sent into the house.

There is nothing of importance in the family history. His father died of bronchitis at the age of sixty-eight; his mother is also dead, cause unknown, but she lived to the age of sixty-five. He has one brother and one sister living, aged respectively fifty-two and twenty-eight, both in good health. Two sisters died during youth, cause unknown. He has three daughters and one son living, in good health, ages ranging from twenty-nine to forty-three.

In the middle of September, 1891, I saw the patient in the Royal Infirmary, Glasgow. The soft parts were very exuberant, extremely painful, and causing a great deal of discharge. These were removed, and afterwards a careful examination was made.

Permission having been obtained, on the 28th September the patient was put under chloroform, and the right upper jaw was excised leaving the horizontal plate of palate bone however, and the posterior wall of the antrum of Highmore. An incision was made from the junction of the nasal and frontal bones straight down the middle of the nose, along the lower border of the septum, and then to the left below the nostril, so as to get well beyond the middle line and free of the disease. The upper lip was then split from above downwards so that only one-third of it was left. A second incision, beginning at the inner angle of the eye, was carried below the eyelid straight out to the zygomatic process of the malar bone. A third was taken from the malar bone down to the external angle of the mouth, so that the soft parts were completely isolated from the normal surrounding tissues. The alveolar processes of the maxillary bones were then divided with a saw, and this was carried straight back to the junction of the horizontal plate of the palate, and the superior maxillary bone. The nasal process of the superior maxillary bone was then divided with the bone forceps, and lastly the zygomatic process of the malar. The upper jaw was seized with a strong pair of forceps, and thus everything was removed, including the inferior turbinated bone, except the posterior wall of the antrum and the horizontal plate of the palate. The diseased soft parts, including the right side of the septum and roof of the nose, were carefully removed with the scissors and knife.

By carefully preserving a small strip of the side of the cheek and lip a piece of tissue was made available for stretching across to take the place of the upper lip.

The patient made an excellent recovery, and at no time was the temperature high. Within a month he was able to leave the hospital, and shortly afterwards the mucous membrane had extended from below upwards, and the skin from without inwards, so as to cover the raw surfaces. Plastic operation in this case was hopeless, as the bone itself was extensively implicated. The great deformity was overcome by artificial means, as the report of my friend, Dr. Woodburn, which I give here, will show. (*See Illustration.*) He says:—

"The first part of the process of mechanical restoration was the closing "of the opening between the mouth and nose, which was practically one "cavity. This was complicated by the unusual dimensions of the aperture, "combined with the absence of teeth to serve as an anchorage for "any appliance. The latter difficulty was overcome in the first one I "made by fitting a plate to the lower jaw in order to carry the ordinary "springs used in complete sets of artificial teeth. This served the end "in view, but, owing to the cicatricial state of the buccal structures, they "were a source of great discomfort. In the present one I discarded the "use of springs, and depended solely upon a perfect adaptation to the "remaining part of the palate and the nasal cavity; the walls of the latter "were lined with vulcanite in continuity with the palatal obdurator. This "nasal portion was made hollow, and serves the purpose, anatomically "and physiologically, of the antrum cavity, and also acts as a fixing point "for the artificial face and nose piece. With this the patient has perfect "comfort, and enjoys comfortable deglutition, very distinct articulation, "and so, notwithstanding its many imperfections, is the *sine qua non* of "his material existence.

"The unsightly appearance presented by the immense loss of the "structures of the nose and cheek was next to be overcome. This was "an opportunity of exercising some mechanical turn of mind, combined "with artistic effect. I took an impression of the parts with plaster of "Paris, extending it beyond the limits of the lesion, and from that, having "made a cast, I modelled in wax something like the counterpart of the "perfect side of the face. This, again, was cast in zinc, and a die made, "on which was stuck a piece of metal, again allowing it to overlap the "outline of the original diseased tissue. I used tin, both from economy "and owing to the only other available metal, aluminum, being liable to "be bent by careless handling.

"The manner of fixing this was some trouble, and after trying many "methods, I had recourse to the old-fashioned one of fixing with the aid "of spectacles, selecting those with long arms reaching behind the ears. "They were rivetted to the front of the metal nose in such a position that "when the whole was in place the tension of the spectacle arms brought "tension to bear in all directions equally, so that in any position of the "head the artifice was immovable. Thus it is, and yet can be removed "by the patient, and readjusted at will with the greatest ease. This face "piece an artist friend painted the tint of the surrounding healthy skin. "The line of the apparatus, which nearly touches the everted conjunctiva "of the remains of the lower eyelid is obscured by having the eye-pieces "made of coloured glass, and the line which lies on the small piece of lip "is hidden by an attempt at a false moustache, the hairs of which have "been taken from the patient's whiskers, and fixed with varnish.

"Such briefly is what I have done for the unfortunate man, and "although my work falls far short of being perfect, yet it has enabled him "to resume his avocation, and take his place among his fellow men minus "the consciousness of being an object of horror and pity."

The patient, since the operation, has suffered no pain whatever. He has rapidly gained in strength, and is now able to walk perfectly well.

With the aid of the false palate made by my friend, Dr. Woodburn, he can speak and swallow as well as he ever did. Up till now there has been no recurrence of the disease. Previously he had been operated upon under chloroform thirteen times, but the disease rapidly recurred after each successive operation.

Dr. SANDFORD asked what was the appearance of the floor of the cavity on recovery.

Dr. MACINTYRE said the cavity granulated over from the skin inwards, so that there was perfect tissue throughout, although the cavity was of enormous size, and through it the epiglottis and other deep structures could be distinctly seen. It had gradually covered in below with mucous membrane, and above with skin, so that all pain had been done away with.

The PRESIDENT reported a case of *Œsophageal Obstruction by a Dental Plate. Extraction three and a half years subsequent to the accident.* (From notes by Mr. Wyatt Wingrave.)

W. T., a man aged thirty-six, engaged as a civil service writer at the Woolwich Arsenal, came under the care of Mr. Lennox Browne at the Central London Throat and Ear Hospital on May 20th, 1892, complaining of difficulty in swallowing and alteration in his voice.

The history was to the effect that three and a half years ago, whilst drinking a glass of water, he swallowed a vulcanite plate with two artificial teeth. He "distinctly felt it go down and stop at the windpipe," but it did not interfere with his breathing. He immediately consulted one of the surgeons attached to the Arsenal, who, failing to either force the foreign body down or to remove it, sent him to St. Bartholomew's Hospital, where several attempts were made under chloroform to remove the plate, but unsuccessfully. It was then "forced down," as he was told, into the "lower gut," and he was ordered to carefully examine his motions, *which he has always since done.* This was in December, 1888.

Soon after leaving the hospital he noticed a change in the character of his voice, which for two months entirely disappeared, while for the last two years it has been more or less "husky."

Difficulty in swallowing dates from the accident, but during the last few months it has considerably increased, and has now become actually painful, "everything seeming to stop halfway down," and causing occasional fits of coughing, during which some "stinking matter" was expectorated. His breath has lately been very unpleasant, and he is never free from the sensation of a disagreeable taste and odour.

On admission he spoke in a very husky voice, and deglutition was obviously attended with considerable difficulty and pain.

Laryngoscopic examination revealed fixation of the left vocal cord in the position of adduction; otherwise the larynx was healthy. There was nothing abnormal to be observed in the pharynx.

On passing an œsophageal bougie, resistance was first met with about eight inches from the teeth, but the bougie eventually passed to a distance of fourteen inches.

At the first exploration by Mr. Lennox Browne a foreign body was struck with a metal-tipped bougie, and apparently localized at a point

about two inches below the level of the cricoid cartilage to the left side, where it was distinctly felt by external manipulation.

On May 21st, the patient having inhaled chloroform to the extent of relieving spasm but not to narcosis, Mr. Lennox Browne dislodged the plate by means of a "coin catcher," and an assistant grasping the throat so as to fix it, he succeeded in drawing it into the pharynx, when it was held by a pair of crocodile forceps and removed.

On examination a recent fracture was seen, indicating that a portion had been left behind, the correctness of this surmise being quickly proved by the immediate removal of the remaining portion (A) by means of an "umbrella probang." The attendant hæmorrhage was very slight.

Subsequent history: Pain rapidly diminished; the temperature, which was 101·2 F. on the day before the operation, fell to 99·8 in the evening of the removal of the foreign body, and became normal the day following. The patient was discharged on May 28th.

Remarks by Mr. LENNOX BROWNE: On November 28th, 1890, I exhibited before this Association a plate of teeth, which had passed into the larynx during an epileptic fit in sleep, and had been in that position unknown to the patient and unrecognized by any medical man for twenty-two months, the patient being told that it had evidently been vomited, the vomiting, however, having really been due to its presence.

In the present case also, the patient had been wafted into a similar fool's paradise by the surgeon assuring him that the foreign body had been dislodged, as was eventually proved, on quite insufficient ground. It is also to be noted that another surgeon, rightly diagnosing that the foreign body was still there, had given an opinion that œsophagotomy was the only means of affording relief.

Surgically the interest of the case is, first, that no greater harm had been done to the healthy tissue by the impaction of the foreign body, especially considering its jagged features, and secondly, the rapid and complete recovery so soon as the cause of obstruction was removed.

An additional point of interest is the service rendered by localization of the site of the foreign body on external manipulation, a procedure which had been previously neglected; and the important aid which was afforded by digital pressure and support during the operation of removal.

Mr. MAYO COLLIER showed a patient suffering from *Stenosis of Larynx.* He said that he had ventured to exhibit this case, as one

of considerable interest and some rarity. The woman was twenty-nine years old, was married when twenty-one, and had three children born dead, and two miscarriages. She had sore throat three years ago, continuing more or less ever since. There was no other evidence of syphilis, The husband was apparently healthy, and in her case there was no suspicion that the symptoms were due to disease of congenital origin. The upper opening of the larynx now was extremely narrowed, but symmetrically so, giving it the appearance of the faucial opening. A well-marked papilloma was also present on the left ventricular band.

Mr. Collier suggested the relief of the stenosis by, first, removal by means of a snare of a fragment of the epiglottis which remained, and then by the use of the cutting dilator.

Mr. G. STOKER observed that with regard to the use of the snare, he did not think its use was indicated or advisable in respect of the small projection which in his opinion was the remains of the epiglottis. If the fragment was not able to discharge the functions of that structure in their integrity, it might nevertheless fulfil them in part. He agreed, however, that it would be an advantage to cut the bands laterally.

The PRESIDENT said the case was very similar in laryngoscopic appearance to one under the care of Dr. Orwin, the details of which were set forth in the chapter on lupus in his (Mr. Browne's) work. A great deal of mischief might be done in lupus without the patient being made aware of what was going on, but it was rare to see such an amount of mischief from syphilis without some previous subjective and objective evidences of either pharyngeal or laryngeal ulceration, and in this respect the case was almost unique in his experience. As to treatment, prior to any attempts at dilatation, he advised the performance of tracheotomy; for though the patient was not now suffering in such a way as to justify that operation, attempts at dilatation, or an intercurrent laryngitis, might at any moment render it necessary under circumstances of urgency less favourable to its performance. He agreed with Mr. Stoker that the remains of the epiglottis ought not to be removed, for one never knew what might be the value of such remnants in aiding the healing process.

Judging from the illustrations of syphilitic stenosis by Schroetter, the pathological process in this case had followed the usual course of events, viz., a gradual diminution of the lumen. Cohen had in his book the picture of a case which might almost be accepted as a portrait of the one before them.

Should the author employ dilatation, the President hoped that he would give his cutting dilator a trial. This instrument presented the advantage of being made as a hollow tube, through which the patient being able to breathe, indication was afforded where the instrument was going, for when it was in the right direction air came through the tube. Moreover, by this means the discomfort, and even danger, of the procedure was greatly reduced.

Mr. WYATT WINGRAVE showed the following *Microscopic Specimens.*

The three slides illustrated some different forms of epithelial growths occurring in connection with the tongue and pharynx.

No. 1, taken from a private patient of Mr. Lennox Browne, is a typical example of stratified or squamous cell epithelioma, commencing in the superficial epithelium of the faucial tonsil. It is by no means as rare as text-books seem to indicate.

Nos. 2 and 3 are both from the Central London Throat and Ear Hospital. The first shows an early stage of columnar epithelioma, commencing in the crypts of the lingual tonsil, and not in the ducts of Salter's or Henle's glands. Many of these crypts are lined with "rod" epithelium. Specimen No. 2 was taken from a case of Mr. Jakins, in which the growth commenced in the pharyngo-glossus, and subsequently invaded the upper larynx.

No. 3 is an extremely rare form of stratified epithelial growth devoid of cell nests. It was removed from the oro-glossus also by Mr. Jakins, and strongly resembled a rodent ulcer. Five months afterwards there were no signs of recurrence.

The PRESIDENT observed that the first case was one of stratified epithelioma of the tonsil, in which he removed a small portion of the growth for microscopical examination. As soon as the malignant nature was made out, the consent of the patient was obtained to a radical attempt to remove the growth by external incision, with previous ligature of the external carotid. This was done by Mr. Pepper. Unfortunately, fatal secondary hæmorrhage took place eight days later. Although less than a week had elapsed between removal of the fragment and the operation, it was surprising what activity the growth took on. From a mere warty fringe it had become a large angry patch of ulceration, and even between the operation and death there were signs of recurrence.

Dr. MACINTYRE.—*On the Etiology of Affections of the Upper Respiratory Tract.*

Last year I had the honour of introducing the subject of bacteriology in relation to the study of diseases of the nose and throat, and as the Council were good enough to request me to give a paper this year, I have attempted once more to bring up some points of interest in the same subject for consideration.

Perhaps it may be useful to make a reference to our point of arrival in the last paper. We dealt first with the general facts bearing upon this magnificent field for study and observation; secondly, we devoted some time to the consideration of the results following the introduction of micro-organisms into the tissues; thirdly, we took into consideration the principles upon which we may found methods of treatment before or after the bacteria have been introduced into the living tissues. To make these points more fully understood a reference was made to the history of the causal association of these organisms in disease; the classifications in vogue were briefly referred to, the physical characters, chemical composition, forms and distinguishing features were as fully considered as it was judged expedient in the time at our disposal.

The second part of our paper was devoted more particularly to the consideration of three things. First, the finding of parasites in apparently healthy persons; secondly, micro-organisms which might have something

to do in maintaining the healthy economy; and thirdly, a reference to the diseases which we as specialists find particularly interesting to study in the upper respiratory tract.

Since then brilliant work has been done in many departments, and the literature is full of suggestions for treatment; confirmation of the views then referred to are being received on all hands, and there is a gradual tendency in every branch of medicine and surgery to give more attention than has ever been paid in the past to etiology.

To-day we will first make some further observations upon the micro-organisms found in the upper respiratory tract, with special reference to the methods of investigation at present at our disposal, and we will afterwards refer to the occurrence of particular organisms which have special bearing upon the work to which we are devoting ourselves. The first part of our work will, therefore, be an amplification of that gone over before, viz., a reference to the bacteria which are generally found in the oral and nasal cavities.

Most investigators in this department, as in almost any other department of medicine and surgery, before beginning the actual study of disease, desire to make themselves fully acquainted with the conditions which occur in the normal structures, because as pathological investigations are but a continuation of the study of physiological processes, so the study of pathogenic bacteria must necessarily be that of the physiology of micro-organisms. As long as tubercle remains outside of the animal tissues, it is purely a matter of biological investigation. As soon, however, as the organism is admitted to, and begins to act upon, the tissues of an animal, the pathological studies begin. Reasoning in this way, not a few investigators have done much to discover the micro-organisms which are usually found in the upper respiratory tract of healthy subjects; and, unfortunately for the advancement of this very complicated subject, a large number of observers have overlapped each other's experiments, so that less has been done than might have been, had small parts of the subject been taken up by each and exhausted thoroughly. To put it more plainly, were our scientific knowledge so advanced that every micro-organism could be classified, its form distinguished, and its life-history recorded, so that at any time it could be distinguished from any other organism, just as we classify the different plants in the higher vegetable kingdom, matters would be comparatively easy. Unfortunately, however, so little do we know about these organisms, that their proper place even in the organic kingdom has not yet been found; and further, many bacilli are indistinguishable by microscopic appearances from each other. A great deal, however, has certainly been done to aid us in diagnosis by careful study of all their characteristics and properties, but as yet no common basis of investigation can be laid down.

Working upon these lines, a considerable number of investigators have started the study of bacteriological investigations in the nose, throat, and mouth, by attempting to put on record all they have found therein; but very few have gone far in this way without coming to the conclusion that the great number makes it utterly impossible to overtake the work, or identify each with other known species. This will be easily under-

stood, because the cavities are being constantly filled with air loaded with all kinds of organisms. Moreover, in the food and drink passing through the cavities, great varieties must find entrance. To attempt such a work is endless, and with all the modern armamentaria at our disposal, little can be done in this way by any individual.

With a view, however, of making ourselves as familiar as possible with the organisms which gain entrance to these cavities at different times—for you will sometimes find an organism one day and fail to find it ever afterwards—a number of experiments were made after the following manner:—Over fifty patients were selected, and cover glass preparations were made from a scraping of the mucous membrane of the nose, and mouth and throat. These were stained according to different and approved methods, examined, and carefully set aside for comparison. Again four different tubes were taken for each case. The first was reserved for control experiments, and left untouched. The second was exposed to the atmosphere of the room in which the experiments were made. Thirdly, a sterilized gelatine tube was impregnated with a slight scraping from the mucous membrane of the nose or mouth; and fourthly, a tube of agar-agar was likewise impregnated. Plate cultivations were made from some of these, and in a considerable number of instances the growth of the organisms was tested on potatoes, etc. Cultivations, of course, were rapidly got in great numbers, and in a very short time it was found to be impossible, as nearly all experimenters have found, to carry such experiments to a legitimate conclusion. The numbers were so great that it became impossible to attempt to record the physical characters, growth, temperature required, production, staining properties, and last of all, isolation and identity with known species. It was so far of use, however, that it made one familiar with the common species found in normal subjects.

Workers in this department, such as Millar, Vignall, Wright, and others, have done good work, and something over one hundred organisms at least have been isolated and described. It will of course occur to most men, that by persistent efforts on the part of different investigators, new forms will be found, until every known micro-organism will have been recorded as having been found in the cavities.

From the above it will be seen that if we were to go on the principle of trying to record all the micro-organisms found in health, in the hope that we might differentiate between them and the micro-organisms found in disease, no progress would be apparent for a very long time to come. The above mentioned experiments were not made with any such intention—the fact was too obvious before beginning—but rather with the object of familiarizing myself with the different species. A moment's reflection, however, will soon show us that we are only experiencing in this department what experimenters have in every other. For example, we can identify a peculiar living organism with tubercle, but the best experimenter is not yet in the position to say that he has a knowledge of the many organisms which may be found in the lungs of the subject afflicted. In other words, we are driven to take up the position of investigating the micro-organisms which are usually present when a

person suffers from a particular affection, and if this peculiar organism can be found in a considerable number of cases of persons so infected, and moreover, if the form, chemical reaction, life-history, and other properties correspond, then we may attempt to prove the causal association between this organism and the affection.

Fortunately, in a considerable number of cases this can be done by the approved method, viz., cultivation of the peculiar organism after isolation from all others; secondly, the introduction of it into the living tissues of a healthy animal; thirdly, the discovery of it in that; fourthly the production of the same disease; and lastly, the re-cultivation of the organism outside of its body, and the identification of this form with the organism found in the patient originally suffering from the disease. In other words, however much we might desire an intimate knowledge of all the forms found in health, the only practical method at our disposal is to search for the association of peculiar organisms in a specific affection, and then by experiment to prove its causal association.

Under the microscope micrococci (probably micrococcus of sputum septicæmiæ) will be seen. These were found in the nasal cavity, probably observed by many others, and impossible to identify with round forms found by others, which grow rapidly in gelatine media, and which under the skin of animals grow and rapidly produce swelling, œdema, and painful symptoms, which disappear in a few days. Again, in the microscopes will be found specimens of bacilli very commonly found in the nostrils, which of course may have been observed by others. A considerable number of the above, if cultivated upon suitable media and injected into the living tissues of animals, are found to be pathogenic. In health, probably owing to the struggle for existence and destruction of each other—probably also to the different temperatures in the mouth, or to the power which the living tissues possess of destroying these enemies to health—they are comparatively harmless. We know that certain organisms can be tolerated in these cavities, which, were they to gain access to the circulation, might prove dangerous to the host. A practical illustration of this will suggest itself to the surgeon in the manner in which bites from apparently healthy persons act on the injured part. It is a well-known thing that a bite is an exceedingly difficult wound to heal, largely owing to the fact that the organisms produce great irritation.

This is no new idea. Stricker gives the history of the idea that human saliva produces poisonous results under certain circumstances, and points out that authorities from the earliest times believed in and observed this fact. Within the last twelve years, however, it has been attributed to the presence of micro-organisms. Raynaud, Lannelongue, Pasteur, Roux, Fraenkel, and others, made inoculations with the saliva and with cultivations, and produced death in animals—particularly in rabbits.

Any attempt to classify the organisms found in the upper respiratory tract into pathogenic and non-pathogenic is difficult, because it must be evident that, while they are harmless at times, or in certain individuals, they may become dangerous under altered circumstances.

For purposes of demonstration I have placed the following under the microscope :—(1) Leptothrix buccalis (these include the forms classified

by Miller as bacillus buccalis maximus, leptothrix buccalis maxima, iodococcus vaginalis, spirillum sputigenum), micrococcus prodigiosus, micrococcus tetragenus, hay bacillus. Also the bacilli of lactic acid, green pus, pyogenes aureus albus, the streptococcus erysipelatis, tubercle bacillus (Koch), and diphtheria (Loeffler's); pneumonia (Fraenkel and Friedlander), micrococcus of sputum septicæmiæ. These are all interesting to anyone engaged in the study of the etiology of the affections of the upper respiratory tract, and there are others to which we must refer, such as syphilis (Lustgarten), even if the causal association be doubted; also the organisms found in cases of rhinoscleroma. That mycosis of the pharynx is not to be ignored the paper by Dr. H. B. Hemenway, in the JOURNAL OF LARYNGOLOGY for February, proves. The higher developed fungi are less common, but are sometimes present, as the aspergilli, and, more rarely in man, actinomycosis. Lastly, we are greatly indebted to Miller for his interesting work on the colour-producing bacteria, although these are more useful in the study of dentistry.

I may now be allowed to refer to some pathogenic micro-organisms found in clinical observation, and to draw a few references from these.

Suppurative processes.—A patient was sent to me some time ago by Dr. Carmichel, of Glasgow. There was a sinus leading from the bridge of the nose at the junction of the frontal and nasal bones into the nasal cavity. The patient explained that some weeks before he received an injury from a piece of wood by a thin spike of it being driven through the nose, giving him at first very little trouble, but great annoyance afterwards. There was marked stenosis in both nostrils, and a constant discharge on the face; the sinus was difficult to heal. On making an examination of the nostril, it was evident that an active periostitis was going on. The mucous membrane on both sides of the septum was intensely inflamed and separated from the bone. It was also evident that there was an accumulation of pus, because the mucous membrane of the septum was pushed outwards on both sides so as to come in contact with the tissues of the middle turbinated bones. An incision was made inside the (previously cocainized) nostril, and a large quantity of fœtid pus discharged. The bone itself was destroyed to the extent of half an inch. This was removed by the electric trephine, resulting in complete perforation of the septum. The wounds were treated antiseptically, and the patient made a good recovery. The external sinus healed within a week.

In the discharge abundant evidence of the staphylococcus pyogenes aureus was found. When the patient called some time afterwards these had disappeared.

Secondly, a patient was sent to me on 18th May last, by Dr. Clark, suffering from nasal stenosis. There was no injury in this case. He was under the impression that he had nasal polypus, and suffered mostly from an offensive smell from the left nostril. On examination it was easy to make out that we were again dealing with a large sac of fluid which had separated the soft tissues from nearly the whole side of the septum on the affected side. An opening could be found at the upper part admitting a probe, and out of this a small quantity of fœtid pus would be

expressed on pressure of the sac from below. A free incision caused the evacuation of a large quantity of pus, and in it there was abundant evidence of the pressure of the staphylococcus pyogenes, and also the bacillus pyogenes fœtidus. As the case improved, which it rapidly did, these organisms disappeared.

These two instances may be taken as types of others which came under my observation in which the micro-organisms of suppurative processes evidently have been intimately associated. In thirteen patients noted lately, I have detected these organisms—four of them affections of the antrum of Highmore where a free opening was made—and it is interesting to note the opinions of others on these points. For example, Hajek is referred to in the recent paper published by Dr. Potiquet on the canal of Jacobson. This author, keeping in mind the large number of organisms found in the nasal cavities, says that affections such as perforating ulcer are most likely caused by the entrance of the staphylococcus and streptococcus pyogenes into the depths of the glands. One cannot help thinking of the results possible owing to the frequency with which these organisms are found in the upper respiratory tract, and particularly in the so-called cases of idiopathic abscess occurring even as low down as the larynx. That they are frequently present in healthy subjects is a matter of common observation. Is it unreasonable to assume that they are really the cause of many such cases?

Erysipelas.—Some years ago my attention was drawn to the subject of erysipelas occurring in the nasal fossæ. One of my colleagues had a patient in the general hospital, suffering from hypertrophy of the mucous membrane on both sides of the nostril, which had extended to the skin round the margins. The deformity resulting in the enlargement of the nasal organ had induced the patient to seek aid. The case appeared comparatively simple, and the hypertrophied parts were removed with scissors. No difficulty was experienced in controlling the hæmorrhage, and the operation was performed with careful antiseptic precautions. I was extremely astonished to learn from the operator that on the fourth day after the operation erysipelas sprang up, which passed into the nasal cavity downwards to the naso-pharynx, and that death had resulted. The operator was a most careful and experienced surgeon, and there was no erysipelas in the hospital at the time. Secondly, another operator in the same hospital, with a comparatively easy operation for the removal of a portion of a bone from the face and opening into the antrum, had a similar experience. There can be no doubt whatever as to the care exercised in this as in the former case. It was at a date two years later than the first-mentioned case. Thirdly, an old lady, over seventy years of age, consulted me something like four years ago for nasal polypi. Owing to her age her medical adviser had not deemed it expedient to interfere, but as the discomfort became greater, after consultation it was decided to remove the neoplasms. One great difficulty, however, was she was afraid to have any operation performed, as she had had three attacks of erysipelas of the face within seven years, each time causing great constitutional disorder, and, as she put it, combined with the discomfort of the nostril, almost proved

too much for her. The operation was successfully performed in the left nostril, and great care was exercised as to the cleaning of the cavity before and after each operation. Before the right nostril was done she received a message to go to the north of Scotland, and the operations had to be arrested. She did not return, as promised, and three months afterwards a severe attack of erysipelas set in on the *right* side, which had not been operated upon, a fact which pleased me considerably, because had it affected both sides her friends might have been inclined to associate the sequelæ in some way with the operation. Careful examination of the discharge revealed the presence of organisms which, in form and after cultivation, left no doubt we were dealing with the streptococcus of erysipelas. Fourthly, a patient, aged sixty-eight, came to me two years ago suffering from a severe discharge from the antrum of Highmore. The case was evidently one of chronic suppuration in the same cavity. The discharges were carefully examined, and found to contain micro-organisms (a specimen of which we see under the microscope), corresponding in form and arrangement to that usually associated with erysipelas. The organisms were easily cultivated in gelatine and agar-agar, although the growth was not very rapid. My intention in this case was to open into the antrum, and to have the parts carefully washed out, but owing to weak heart and other reasons, he was afraid, and refused to undergo the ordeal. Some little delay took place in giving his consent, and four months afterwards he called to state that he had had a severe attack of bronchitis which had terminated with a sharp attack of erysipelas, beginning in the affected nostril and side of the face, and followed with every indication typical of the disease. There was now a more profuse discharge, and in it the same organisms were found. In two other cases I have made similar observations. One of these particularly struck me, occurring in a young man, twenty-three years of age, where the erysipelas caused intense swelling of the external parts, œdema in the nostrils, and ultimately a pharyngitis, with subsequent post-pharyngeal abscess of a very acute type.

The question arising from the above mentioned cases will naturally be, are not a considerable number of abscesses in the nasal cavity and antrum of Highmore, and even post-pharyngeal abscess, due to the organism of erysipelas? I think there is fair room for assuming that there is an association, and even causal association, and at least it is deserving of further consideration and thought. Are we to assume in these cases that there was accidental infection from the outside, or were the organisms causing this affection or their spores lying latent in the cavity, and only waiting a suitable opportunity for development? Possibly both explanations may be true, but it seems a reasonable position to take up that in the cases of recurring erysipelas they were most likely stored therein. In any case the practical application lies in the fact that all such cases require careful antiseptic treatment before, at the time, and after operation. Similar observations have been made by others. Dr. Luc, of Paris, reports a case of empyema of the antrum of Highmore, caused by erysipelas, and in the discharges he found typical organisms.

Diphtheria.—No pathogenic organism is more deserving of our atten-

tion than that of diphtheria, and I may be pardoned for once more bringing this before you. Since its discovery by Klebs, Loeffler's great work, and the discoveries of Roux and Yersin by producing typical paralysis in animals, not only with the germs but with their products, great attention has been paid to it. In our last paper we referred to the best methods of obtaining and cultivating the same. During the year I have made a number of observations, and in something like thirty-eight per cent. bacilli, corresponding to that described by the above-mentioned writers, were found. This is by no means so frequent as some observers state, but, on the other hand. I have not been as favourably situated for observation as many, and that for a simple reason. It is my habit when seeing cases of diphtheria, in consultation with others, to take a specimen from the false membrane, but we must remember there are many organisms present; that in some cases one is called in at a comparatively early stage, in another at a very advanced stage, and probably once only. In consequence of this, one has not the same advantage as the practitioner who follows the case from beginning to end. Nevertheless, in the proportions mentioned above these organisms have been observed.

Other workers have since last year given other results. Dr. Baginsky found Loeffler's bacillus sixty-eight times in ninety-five cases of diphtheria. He makes an important note likewise; that of twenty-four cases which gave the impression of true diphtheria, and in which the bacilli were not found, only one died. Dr. Tangl believes after investigation that the bacillus is of a certainty the cause of the affection. Dr. Retter found it in twenty-nine cases of eighty-two examined. In this department Drs. Welch and Flexner have contributed excellent work on the relation of the pseudo-bacillus to the true diphtheritic organism.

With such a consensus of opinion as to the true nature of the disease, and the importance of careful differential diagnosis between real diphtheria and conditions simulating it, we can no longer afford to ignore the importance of this organism any more than we do that of tuberculosis. This is true of nearly all the affections which we are called upon to treat. For example, an interesting communication on the value of these organisms in diagnosis is made by Dr. Seigl of Britz. An epidemic occurring in over three hundred persons was investigated from a bacteriological standpoint, and the author had no doubt that the microbe found was identical with that of the foot and mouth disease of animals. He describes it under the heading, "Stomatitis epidemica."

To sum up, I have brought some of these facts before you for the following reasons:—

First, to point out the difficulties attending such investigations, and particularly the overwhelming nature of the work in attempting to gain an idea of the organisms found in health and disease, and to seek your aid as far as possible in its continuation.

Secondly, to emphasize the extreme importance with some examples from clinical observations, and particularly the lessons to be drawn from a careful observation of the work which has been done by so many, not the least of which is that, inasmuch as the upper respiratory tract is full of

micro-organisms, non-pathogenic and pathogenic in nature, extreme care and cleanliness in antiseptic precautions must be insisted upon.

If I were asked for a reason to justify the existence of such an association as this, and for the special study of this department, I think I should select the recent treatment and advances made in the study of the etiology and pathology of catarrh. The healthy tissues are able to look after themselves, but when we reflect that the great proportion of people suffer in some form or another from catarrh—acute, sub-acute, and chronic —and moreover when we consider that this catarrh leads to impairment of function, and so in a greater or lesser degree to abrasion of the tissues of these parts, we are driven to the conclusion that the barrier between health and disease is constantly being broken down, and must afford an entrance to these organisms. That they do enter the tissues we can show from the last photograph put upon the screen, for which I am indebted to Dr. Thomas Reid, Glasgow. In it the mycelial spores are seen developing within the tissues of a sarcoma of the choroid. That inoculations from weak points are constantly taking place could easily be demonstrated, but this I must defer to another occasion. I trust to put facts before the Society which have taken years to collect, but which may be sufficiently convincing to prove by actual demonstration that even tubercular disease, and when I say tubercle I might add many other chronic affections, is too often thus fatally admitted into the system.

The PRESIDENT expressed his sense of the thoroughness of the paper which they had just heard. At the same time, from its very nature, they could hardly do more than listen with admiration to the truly remarkable results which the author had obtained by long and painstaking research, and as he had remarked with regard to the same author's previous paper, few present were able to discuss it off-hand, for much time was needed even for its full digestion. The case of the lady who had developed erysipelas in the nostril, not affected with polypus, showed not only the importance of antiseptic precautions in operations, but also that of the open nostril for the ordinary purposes of health. It was a daily experience to find that relief of one much obstructed nostril was followed by such benefit that the patient became almost hypercritical, and would suffer from distress in a nostril which had previously appeared clear and had been doing all the work of nasal respiration. The presence of so many micro-organisms in the mouth was largely explained by the fact that the majority of persons breathe through the mouth instead of through the nose; and the circumstance that any one of these organisms, though primarily innocent, might become pathogenic, was a fact that could not be too strongly insisted on. With regard to the case of diphtheria in which the disease was transplanted to the intestines and proved fatal, he mentioned that he had recorded one such case in his book. Unfortunately, no *post-mortem* was permitted, but Dr. Wilson Fox, who had seen the child, agreed that this was what had taken place.

Mr. MAYO COLLIER wished to second a vote of thanks to the author of the admirable paper. He thought the paper was indeed worthy of a greater society than theirs, and he suggested that it would have commanded respect if read before the Royal Society. Personally he knew

nothing about bacteriology; he could only admire the author's abilities in this direction, and wonder how he could find time for such research. Such a paper conferred a service on the profession at large, and he hoped the author would not limit his remarks to that society: it would be welcomed at any society in London.

Mr. BENDELACK-HEWETSON said the paper was particularly interesting to him, because at the Glasgow meeting of the British Medical Association he had drawn attention to the fact that operations for cataract were occasionally followed by rapid suppurative processes, the cause of which could never be made out. His own extreme precautions in operations for cataract had been laughed at, but when he stated that pathogenic micro-organisms from the operator's own mouth, while talking, were undoubtedly projected into the eye during the operation, setting up the processes which ended in panophthalmitis, just as they would if cultivated in gelatine, more attention was paid to his warnings. Whether as general surgeons or as specialists, they ought to take home with them these all-important truths, which showed how, quite accidentally, a surgeon might be the means, not only of causing the failure of the operation, but also of causing the death of the patient.

Mr. BENDELACK-HEWETSON (Leeds).—*The Relations between the various forms of Nasal Stenosis and Deafness.*

The subject, he said, had occupied his attention for several years, and he had been gradully developing it. The number of observations when he first broached the subject, however, was not very great, not sufficient to enable him to sum up the results; but now, with a more extensive number at his command, he was enabled to speak more definitely than was formerly the case. Since he first called attention to the correlation of nasal stenosis and deafness at the Leeds Meeting of the British Medical Association, he had added considerably to his stock of information. Going into the subject broadly, he had been endeavouring to find out what was the cause of nasal stenosis. He had found it associated with a narrowness of the jaws, leading to crowding of the teeth, elevation of the palate, etc. Then he proceeded to inquire into the causes of this narrowing of the modern face, the ultra refined face, with this result. He had been assisted in the matter very greatly by Mr. Henderson Nichols, a neighbouring dentist, and, together they had come to these conclusions:—That the result was, speaking broadly, a devolutionary process going on in the bones of the face, due probably to the fact that civilized men partook habitually of a much softer food than that which fell to the lot of savage man. By reducing thus the demands upon the muscles of mastication, they became less powerful, and when muscles became weaker their attachments to bone became less strong, and the bones themselves, no longer having need of the same strength, became less developed. Speaking broadly, therefore, they had come to the conclusion, supported by dentists generally, that there was a strong probability of this devolutionary process being due to the difference in the food, and that nasal stenosis was caused by the alterations in the bones of the face as a whole. To bear this out he had examined the jaws of the people who did

eat very soft food, and who did not exhibit this tendency to formative degeneration of the facial bones. These people, of whom he had examined a large number, were in the first instance coal trimmers, men who were for the most part rescued slaves from the Zanzibar coast. They were magnificently formed men, and he had never found any of them exhibiting even in the slightest degree a tendency to nasal stenosis. Then he had examined Hindoos engaged on the P. & O. line. These men fed on hard lentils and curry, and they suffered from none of these conditions.

On his last visit to Morocco, he had carried on the inquiry on a much larger scale among the Arabs, and the same remark held good. They all had beautifully arranged mouths, good teeth, and no nasal stenosis. Although he had examined a large number, he had not alighted upon a single instance. What, then, was the result of the mouth-breathing caused by nasal stenosis? These effects could be seen in any child who, in consequence of nasal stenosis, breathed constantly through the mouth There were thickened, enlarged tonsils, a stinking condition of the mouth; an ideal nest for the micro-organisms described by Dr. Macintyre. Such a child never from its infancy had a proper nasal sanitation. One result was that the thorax became narrower. These children became pigeon-breasted, with a stooping gait like that of an old man with bronchial asthma. He hoped one day to be enabled to show them a complete collection of photographs showing what was the condition in these cases, and the extent to which it could be improved by judicious measures.

Other conditions, however, were met with. Dr. Guye, of Amsterdam, had shown how nasal stenosis led to interference with the return of lymph from the brain, and how blockage of the cribriform plate of the ethmoid bone led to the condition which he had termed aprosexia, in which the drainage of the brain was imperfectly effected. The results in children with nasal stenosis were very remarkable indeed. Someone had observed that a very large proportion of idiot children were mouth-breathers, and though this matter was worth looking into further, it was certainly a matter that called for attention at the hands of such a society.

These premises brought him to the threshold of his subject. He had shown that all these conditions—malformation of the thorax, a defective gait, anæmia caused by defective aëration of the blood and insufficient oxygen, or by the disturbance of the general nutrition caused by sleep being troubled by the respiratory difficulties, the filling of the post-nasal cavity by adenoid growths and pathological micro-organisms, which led sooner or later to abscess of the middle ear or the advent of scarlet fever, because the little patients could not get rid of the mucus that accumulated in the nose—all these, one or several, might be caused by nasal stenosis. The instrument he used resembled a glove stretcher. In these cases of nasal stenosis he always tried to find out first what was the cause of the blockage. One met with patients who had never breathed properly through the nose. In addition to the actual narrowing of the bones, and the approximation of the middle turbinated bones to the septum, there was often a swollen condition of the latter, the effect and not the cause of

the stenosis, also blockage by adenoid growths and enlarged tonsils. His object had been to determine by what means one could best restore nasal breathing. If nasal breathing could be restored as a permanent thing, the question of the treatment of the deafness remained to be considered.

Now, although Politzer had done so much to assist aural surgery to the front, he feared that on the whole the very brilliancy of his results had tended to obscure and to divert attention from the real nature of the affection. The sudden improvement in deaf persons in whom the deafness was due to conditions such as these, led the practitioner to overlook the exact nature of the conditions underlying his ailment. Personally he did not find much occasion to use Politzer's bag, and his Eustachian catheters lay rusting in the drawer. (In reply to the President he observed that this remark applied principally to children.) He found that by removing the adenoid growths he did some, but not permanent, good. A good deal of improvement, too, followed the removal of the turbinated bodies, but still the benefit was not sufficient. It was this fact that had led to his having recourse to the dilator. Looking at the deafness as a symptom, and not as a disease *per se*, he found that the best test was to ascertain how many seconds the child could keep the mouth shut, usually not more than from ten to thirty, or at most forty, seconds. The success of the operation advised by him was revealed by the fact that children, after having gone through it, could sleep even with the mouth shut. There was a marked change in the temperament of the child, in his features, in his intellect—a change nothing short of remarkable.

When he brought forward these facts at Leeds he could only speak of some three or four hundred cases, but now he could reckon by thousands. He mentioned the case of a child, a mouth-breather, who could not hear a watch at either ear, there were no adenoid growths, no enlargement of the turbinated bones. He dilated freely, and a marked and rapid improvement took place. Children wore a celluloid tube for seven or eight days to prevent recontraction, and hearing returned even before the tubes were removed. He showed photographs of a patient taken before and after treatment. The next case was practically the same. The child could hear a watch one and a half inches on the right, two inches on the left. Snores loudly all night. The nostrils were dilated, post-nasal growths were removed, and hearing became normal within a month. In another similar case the facial expression had undergone an enormous change since the operation. He admitted that the instrument looked a powerful weapon to introduce in the nose, but he was obliged to use all his force to open properly. It crushed back the wall of the antrum, and then the tubes served to prevent reclosure.

When he first began to practise this operation, it was followed by some degree of fever, but since he had made the patients vomit up the blood that had been swallowed during the operation, and washed out the cavity with weak Condy's fluid, these febrile symptoms had ceased to manifest themselves. He showed charts of cases showing that practically no rise of temperature took place at present. If the turbinated bones were enlarged he always removed them before dilating, because he did not wish

unnecessarily to complicate the operation. At the same time he scraped away all post-nasal adenoid growths when dilating. A very large proportion of the persons who consulted complained of chronic otorrhœa, and these got well within a fortnight, or at most three weeks.

The PRESIDENT asked the author whether he had ever met with any untoward results from this treatment in the shape of suppurative otitis or other evidence of pyæmia?

Mr. BENDELACK-HEWETSON said that the tubes were removed twice daily, and the naso-pharynx washed out with a weak solution of Condy's fluid. No untoward effects had ever been remarked as the result of the treatment.

The PRESIDENT, reserving further remarks, said he could not altogether agree with the suggestion that curries, lentils, or vegetable diets were harder food or likely to call into greater play the muscles of mastication than the dietary employed by Europeans generally. He suggested that their perfect mastication did not necessitate as much force as the average specimen of meat.

Mr. MAYO COLLIER felt constrained to express his entire disagreement with the author of the paper, both as to his theory that a devolutionary process in the muscles and bones of the face was a common cause of nasal stenosis, and as to his practice of forcible dilatation. As to the first, no particle of proof had been brought forward in support of his contention, and no notice had been taken of his (Mr. Collier's) paper read a few months ago before the Association. In this communication he had placed facts and statistics before this Association which proved beyond doubt that nasal stenosis and all its sequels—the pinched nose, the thin drawn face, the high palate, deformity of the teeth, distortion of the orbits, the difference in size of the nostrils, etc., etc.—were all due entirely to unduly disposed atmospheric pressure; moreover, these views met with unanimous approval, or, at least, no dissentient voice had been raised. He had shown that up to the age of seven, nasal obstruction was unknown, because the anterior nares were wide, were on the same level as the floor of the nose, the turbinated bones were not developed, and no erectile tissue was present in the nose. He had further pointed out that at the age of ten to fifteen the turbinated bones developed, and that the cartilaginous portion of the nostril assumed a position below the floor of the nose, and at this period catarrhs and slight injuries were a fertile source of blockage of the nose. He had laid before them cases in which the nostril had been artificially blocked in young animals, and this inevitably led to certain deformities, such as deflection of the septum of the nose, highly arched palates, and irregularity and crowding of the teeth, as well as to chronic inflammation of the nasal, naso-pharyngeal, and laryngeal mucous membranes. With regard to Lascars and Coolies, he had pointed out, giving five or six thousand observations, that aborigines were not so subject to deflections of the septum nasi as Europeans, probably because they led more healthy lives, lived in a more uniform temperature, and were therefore not so much exposed to catarrhs. The author's facts were thus accounted for. Mr. Hewetson had drawn attention to the fact that deafness was often

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associated with nasal stenosis, but this is exactly what one might expect. By blocking one or both nostrils the posterior nares and Eustachian tubes were chronically being dry cupped, and the openings into the tympanum consequently obstructed. The treatment in these cases was not alone Politzer's bag, but was to open the nasal cavities. Politzer's bag gave relief for a few hours, but by restoring the passages in one or both nostrils the hearing was cured permanently. General surgeons might laugh, but he asserted it was the only way to give permanent relief. He asserted that the majority of affections of the larynx and lungs were due to blockage of the nostril, due, in fact, to the constant dry cupping of the respiratory tract. Passing on to discuss the treatment suggested by the author, he urged that to introduce such an instrument as the one shown them into the nose to force a passage, as they might attempt to force open a blocked gas pipe, was neither more nor less than a barbarism.

The PRESIDENT observed that this was rather a strong expression to use.

Mr. COLLIER continuing, said he felt compelled to speak strongly on a point which appeared to him fraught with danger. He pointed out that in these cases there was usually marked deflection of the septum. In from seventy to ninety per cent. of these cases marked deflection was present. The use of this instrument meant fracture or dislocation of the septum, without any means of keeping the parts in place afterwards. If there happened to be enlarged inferior turbinated bones it meant great injury, which was sure to be followed by sloughing. If polypi were present it meant crushing them, and leaving decaying tissues in the nasal cavity with all the possible consequences. He maintained that, under these circumstances, unless one was absolutely certain as to the state of the parts, the use of such an instrument was, in his opinion, unjustifiable.

The PRESIDENT pointed out that the author did not recommend its use indiscriminately in every case of nasal stenosis, and Mr. Collier's assertion that the treatment was adopted without a previous diagnosis was gratuitous.

Mr. COLLIER said he had heard no attempt to differentiate between the cases in which it should be used and those in which its use was not indicated.

Mr. BENDELACK-HEWETSON said that the shortness of the time at his disposal had prevented him going as fully into the subject as he would have desired, but as a matter of fact he never used this treatment for polypus nor indiscriminately.

Mr. COLLIER said that he certainly understood that the author advocated the treatment in all cases of obstruction of the nose, and as this was not the case he would withdraw the expressions he had made use of in this respect. He could quite understand that in certain cartilaginous deflections of the nasal septum the instrument might be useful, but he could not admit that the author's treatment was in any sense an advance on the treatment now in use.

Mr. GEORGE STOKER said he was himself a little mixed as to the

meaning to be attached to the "devolutionary process" advanced by Mr. Hewetson. He must join issue with the author in respect of his view as to the eating of soft food being the cause of nasal stenosis. He had had a good deal of experience of living among savage races, and he could not admit that the difference between their articles of food and our own was sufficient to explain or account for the absence or presence of nasal stenosis. The savage races ate meat in large quantities, with boiled Indian corn and clotted milk. It was certainly a fact that these people had wonderful teeth, and it was very rare to see anything in the nature of decay, probably because they lived more natural outdoor lives. It was the habits of life that were different and not the food. He had been struck with what had fallen from the author in reference to the use of Politzer's apparatus. He himself was prepared to admit that its use was principally as a means of diagnosis, and as a means of ascertaining what progress the patient was making; he thought it was wrong to Politzerize a patient, and then to send him away with an idea that he had derived permanent benefit therefrom. He had never himself used the instrument shown by Mr. Hewetson. He had not had the courage. Perhaps he might summon up courage in the future in view of the brilliant results claimed for the treatment. He had already resorted to dilatation for nasal stenosis in the young, using for that purpose a large sponge.

Dr. WARDEN (Birmingham) concluded that the instrument was not to be used for roughly poking about among the turbinated bones, but laterally outwards from the septum, and, he supposed, gradually. If the instrument were used carefully and quietly, he did not see what harm could be done. He himself was much impressed with the advantage of these blades. He asked whether the dilatation was effected under an anæsthetic.

Mr. HEWETSON: Yes, under chloroform.

Dr. WARDEN, continuing, said he was very much pleased with the celluloid tubes, and he quite appreciated the advantages likely to attend their use. He pointed out that nasal stenosis had only been recognised by that name during the last few years—probably not more than ten or twelve years—and when he first commenced the study of this affection, he had no idea how common it was. He hardly ever examined an ear or throat case now without finding it present more or less. He was also Medical Officer of the Birmingham Ear and Throat Hospital, and connected with the Royal Deaf and Dumb Institution, and there he had made very careful examinations in this respect with the result of finding it to be present in nine-tenths of the cases. Mr. Collier had remarked that Mr. Hewetson's use of this instrument would probably excite laughter on the part of general surgeons, but specialists were probably by this time accustomed to the ridicule of general surgeons. Dr. Warden had been in this department for thirty years, and he found that this laughter diminished from year to year. They, as specialists, had made their influence felt in the scientific world, and that progressive movement was likely to continue. By giving their undivided attention to this branch of medicine they were certain to advance the treatment of these cases. He had no doubt that they had at present taken a

standing and a position which would ultimately tend to specialists being the leaders and pioneers of science in their respective department.

Dr. TURNBULL (Philadelphia) observed that it was indeed very important to examine the anterior and posterior nares in cases of deafness. When in doubt he always sent his patients on to a neighbouring rhinologist. He did not understand how it was that there was to be no department of aural surgery at the forthcoming meeting of the British Medical Association, although at Cork and at Glasgow they had large meetings. The throat had very little in common with ophthalmology, but affections of the throat and nose were very closely allied to affections of the auditory apparatus, and it was extremely important that the two specialties should be studied in common. Adenoid growths, enlargement of the tonsils, deflections of the septum, leading to alterations in the whole contour of the face, produced effects on the hearing as well as on the naso-pharynx. He hoped, therefore, that the society would see their way to extending the scope of their enquiries so as to include otology.

Dr. MACINTYRE (Glasgow) said he felt quite sure that we could render after-treatment of these cases comparatively simple by careful antiseptic precautions. The feverishness in Mr. Hewetson's earlier cases could only be attributed to septic absorption. It might be impossible to keep the parts here as aseptic as in a limb after amputation, but the condition could be approximated by proper antiseptic precautions, and the spores not allowed to develop in the parts. He would like to ask the author of this paper what he intended to do by these processes of dilatation. Did he simply mean to drive the hard structures out of the way? The turbinated bones did not develop until a certain age, and many cases of deafness occurred before that. With regard to the question of general surgeons, he was not inclined to enter into the discussion, but this was quite clear—that physiology had taught us to breathe through our nostrils, and many people did not perform this function properly. Why then should we not get them to do so if this could be safely accomplished? It seemed to him the true method was to ascertain where the obstruction was, and then to remove it. If the propriety of removal were conceded, he was unable to understand why the hard parts should not also be attacked. He was at a loss to understand why so little attention had been paid to the upper respiratory tract. There was not a regulation, until recently, in our Scotch universities which would force a man to look into the nose or throat; and while he did not blame the man, but the system, it was strange that diagnosis had so long been a matter of making out lesions through the chest wall, which were usually extensive before the cruder methods enabled us to detect them, while much more certain evidence could often be obtained by ocular inspection of the larynx.

The PRESIDENT observed that he was in the habit of insisting that the nose was the front door of the respiratory tract, provided with safeguards in the way of structures for warming, moistening, and filtering the inspired atmosphere, and that persons should take in the air they require through the front, and not through an unguarded supplementary entrance. It seemed absurd to urge such an obvious thing, but it was necessary so

long as its importance was ignored. The moment a patient says he has a dry mouth in the morning one may know that he sleeps with open mouth. The author's remarks as to the number of seconds a patient could remain with the mouth shut did not represent the whole of the mischief; patients might be able to breathe with the mouth closed, consciously, or during the day, and yet sleep with their mouths open the whole night. He had already stated that he was unable to agree with the author's prefatory remarks on the theory of nasal stenosis, but he thought that Mr. Collier had attached too much importance to these points of theory, and not enough to the practical part of the paper. As to aprosexia the President mentioned the case of an officer who was working up for Staff College examinations, and who came to him complaining that he was quite unable to apply himself to his work; he was found to be suffering from nasal polypi, but from the moment that this cause of obstruction was removed he brightened up, and was able to continue his studies. Such an event, which happened occasionally in the adult, was common in children, against whom the charge of stupidity or laziness was often unfairly applied. It was a remarkable fact that affections of the naso-pharynx occurred much more intensely after attacks of scarlet fever or measles. On the other hand, he had no doubt that the exanthemata, as well as diphtheria and other acute specific diseases, occurred much more readily and frequently in children who were mouth-breathers. He did not agree with the view that Politzer's bag should only be used as a means of diagnosis. To say that it was only useful as a temporary relief to difficulty of hearing was a mistake; one met with a number of cases in which, after operation, Politzerization was required in order to confirm the cure. He himself was in the habit of ordering a Politzer bag for patients, and letting them use it themselves, and he deprecated as strongly as anyone the urgency of frequent visits for the purpose of its employment by the surgeon. He admitted, however, that the ease with which it could be used had led to its abuse, especially by the uninformed general practitioner, who frequently used it as a matter of routine without any attempt at diagnosis of the true cause of the Eustachian obstruction, or of the vacuum in the tympanum. With reference to Dr. Macintyre's remarks, he said that he and his colleagues had come to the conclusion that the less one douched the nose after operation the better, for they believed that it was a fruitful source of suppurative otitis. They were now adopting the dry treatment, but while no longer using douches they admitted most absolutely the importance of antisepsis in the after-treatment of all cases of intra-nasal surgery. In regard to the number of cases calling for the treatment of Mr. Hewetson he observed that it was well known that there was no great development of the turbinated bones until puberty, but he had found so frequently that removal of adenoids had led to relief of turgid turbinal bodies that he had come to the conclusion that it was very rarely necessary to do anything to these structures before the age of puberty. The hypertrophic rhinitis, if one could employ such a term for children, was often cured of itself after removal of the adenoids. The same remark applied to the majority of cases of chronic pharyngitis in children.

Lastly, on behalf of the society, he wished to express his admiration of the photographs exhibited by Mr. Hewetson. It was almost impossible to believe in several of them that the pictures before and after treatment represented portraits of the same individual. They had, however, seen similar effects follow removal of adenoid growths, which proved that it was the opening of the nostril that effected the difference, without regard to the particular means employed to attain that end. Finally, he would remind the Fellows that a certain number of children who had been mouth-breathers would continue to be so at night, even after opening the nostrils, unless precaution was taken to support the chin during the period of unconsciousness, until the habit was removed.

On the motion of the President, a cordial vote of thanks was accorded to the author for his contribution.

In reply to a question by Mr. Hewetson, the PRESIDENT said he had always used nasal douches warm, but he now *never* employed them till twenty-four, or preferably, forty-eight hours after operation.

Dr. MACINTYRE pointed out that when there were blood-clots or other septic material, douching afforded the only practicable means of getting rid of it.

Mr. BENDELACK-HEWETSON, in reply, said he did not mind his theories being attacked so long as his facts were fairly treated. The object of his paper was not to force theories upon the society, but to bring before them certain facts which he thought might be considered of interest. He would be glad if any member would take advantage of an opportunity to call and see him operate at the Leeds Infirmary. It was not an operation blindly carried out, but a delicate scientific widening of an abnormally narrowed tract, removing whatever there might be requiring removal. In the case of some children he had shown there were no adenoids nor enlarged turbinated bones, but only narrowing of the nostrils, simple dilatation of which cured the deafness. That occurred with more or less frequency. They often differed on points that were curious, and he suggested that there might be something in the nationality of the patients. In London they had to deal with classes of people who came from widely different and distant parts, and in these the tendency of the disease differed enormously, as did also the general characteristics. Until they had looked at the same people from the same point of view they were not justified in discrediting what another had said on such matters. In conclusion, he said he would not be dissuaded from pursuing this treatment until and unless it could be shown to be productive of harm, a conclusion which nothing in his own experience tended to justify.

The PRESIDENT, before leaving the chair, offered a few words of thanks to the Fellows for their support during his year of office, and congratulated the Association on the important work which had been achieved. Making allusion to an objection on the part of one of the editors of the Journal which published their transactions, that a "layman" had been allowed to take part in the discussion on Voice Training, he justified his action on the ground that three of the Fellows desiring to speak had given notice that they would base their remarks on the teachings of that gentleman,

and would show pupils who had been trained by him. All who were present on the occasion would, he thought, agree that the scientific character of the debate had not—to say the least of it—been degraded by the contribution this "layman" had made to the subject. In any case the President took any blame that he might be thought to have incurred, and apologized to the Fellows if it was considered that he had transgressed his privilege in the action he had taken. At the same time he could not help expressing his regret that any objecting Fellow should, instead of communicating his views to the Council, have preferred to write anonymously in the very Journal which, from its connection with the Association, might reasonably have been expected to advance rather than retard its interests.

Dr. WARDEN then proposed the following resolution :—

'That the Fellows at this meeting, so far from condemning the "President for having asked a layman to take part in a discussion "on Voice Training, consider that the usefulness of the debate "was thereby increased, and he is thanked for having taken the "trouble to provide this additional feature of interest to the "occasion."

This was seconded by Mr. MAYO COLLIER, who remarked that the President's invitation had come—although not officially—under the notice of the members of the Council, who approved of his action; and this statement was supported by

Dr. ORWIN, another member of the Council, who, in expressing his regret at not having been present at the last meeting of the Association, paid a warm tribute to the services which the layman in question had rendered to many of his patients.

The resolution was passed unanimously, and the meeting adjourned.

The following were elected members of the Association:

EDWARD BALL, 2, Part Street, Southport.
G. CHARLES WILKIN, 27, Harley Street, Cavendish Square.
FRANK MARSH, F.R.C.S.E., Paradise Street, Birmingham.

THE THIRTEENTH GENERAL MEETING of the ASSOCIATION was held on DECEMBER 9th, 1892,

At the Medical Society's Rooms, Chandos Street, London.

Dr. SANDFORD (Cork), *President*, in the Chair.

Dr. W. MILLIGAN.—*Case of Intra-Nasal Sarcoma.*

Mr. President and Gentlemen,—In July of this year, Miss S., aged forty-five, consulted me on account of obstruction of the left nostril and total loss of smell. She stated that twenty years previously she had had a polypus removed from the left nasal passage, and subsequently had had the base of the growth freely cauterized. She experienced no further trouble from this nostril until about seven years ago, when the nasal passage again became partially occluded, and a profuse secretion was constantly present. A polypus was again removed—this time, however, in a very crude manner. The projecting part of the growth was cut away with scissors, and other portions were dragged upon with forceps. She states that hæmorrhage was very severe at the time. No after treatment was adopted.

Two years ago she consulted a distinguished gynæcologist for some uterine trouble. A uterine polypus was removed with very marked relief to all her sufferings. In the early part of March of this year she became aware that the left nasal passage was again somewhat obstructed, and noticed also that the left lower eyelid was somewhat swollen in the morning. A considerable nasal discharge was present. The discharge was frequently fœtid, and at times she had slight attacks of spontaneous hæmorrhage. An occasional boring pain in the left infra-orbital region caused her a good deal of anxiety. From March to July all the above symptoms became somewhat aggravated. Her family history was good. Her father and mother are both alive and healthy. One brother died of rheumatic fever. Her four other brothers are alive and in perfect health. She has had four sisters; one died in infancy, the others are healthy.

On examination the left lower eyelid was found considerably swollen and puffy. Epiphora was present to a slight degree. The left nasal cavity was found partially occluded by a mass of polypous-looking tissue. The growth appeared to spring from the mucous membrane covering the middle turbinated bone and to spread backwards almost to the post-nasal space, and laterally towards the maxillary antrum. Examination—with Voltolini's electric lamp placed in the mouth—showed the antral area upon the affected side to be opaque.

The age of the patient, the history of the trouble, and the occasional attacks of spontaneous hæmorrhage from the nose pointed to the proba-

bility of the growth being malignant. A small portion of the growth was accordingly removed with a cold wire snare (traction being made extremely slowly) for the purpose of microscopic examination. Very severe hæmorrhage attended the removal of this portion of the growth. So much was this the case that after ineffectual attempts to arrest it by plugging the nostril, and the use of perchloride of iron, resort had to be had to the galvano-cautery.

Microscopic examination proved the growth to be a myxo-sarcoma of a peculiarly vascular nature. The patient was advised to submit to operative interference of a radical kind.

On August 2nd the patient was put under chloroform, and Mr. Thorburn, of the Manchester Royal Infirmary, laid the left nasal cavity freely open by means of an external incision, and removed the growth with spoons and scissors. The maxillary antrum was also opened, and its mucous membrane, which was likewise affected, freely curetted. During the performance of the operation hæmorrhage was very severe, and the patient became almost pulseless. Rectal injections of brandy and hypodermic injections of ether had to be given. The parts were very freely douched with warm water, and then painted with Whitehead's solution.

Recovery was fairly rapid, and since the performance of the operation the patient has been fairly comfortable.

Remarks.—The case appears to me to be of particular interest from the fact that we have here in all probability to deal with a case of nasal polypus which has undergone malignant degeneration.

The history of the case points to the conclusion that originally the growth was a simple nasal polypus. The duration of the trouble is, I think, positive evidence against the growth having been originally malignant. It must not, however, be forgotten that benign and malignant neoplasms may co-exist in the same nostril. In this particular case, however, careful search showed that only one growth was present, and microscopic examination showed that it was sarcomatous in structure.

It is an interesting point in such cases as to whether the malignant degeneration is due to the effects of operative interference or to some inherent tendency in the growth itself. It is somewhat curious, I think, how seldom we meet with such cases considering the enormous numbers of people who suffer from nasal polypi, and the rough and ready forms of treatment they have so frequently to submit to. Bosworth,[1] speaking of this, says, "This question is naturally much confused, in that it may be that those cases which have undergone malignant degeneration have been largely the result of crude methods of extirpation, rather than of any inherent tendency of the myxomatous tumour to undergo this form of degeneration."

J. W. Hulke[2] reports the case of a nasal polypus, which after operation at varying intervals of time developed into malignant disease.

Newman,[3] in his recent book upon "Malignant Disease of the Throat

[1] "Diseases of the Nose and Throat," vol. i., p. 399.

[2] "Ophthalmic Hospital Reports," vol. iv., p. 98.

[3] "Malignant Disease of the Throat and Nose," p. 144.

and Nose," records the case of a German, aged forty-eight, who for a year had suffered from nasal polypi which had been operated upon a number of times with forceps, followed by rapid recurrence. On coming under his care, Dr. Newman removed a number of small polypi, and came down upon a soft grumous-looking mass springing from beneath the middle turbinated bone, which bled profusely on the slightest manipulation. On microscopic examination, this proved to be an angio-myxo-sarcoma. The mass was successfully extirpated with a cold snare, and when seen six months afterwards there was no recurrence

Lennox Browne states that after operation polypi assume more of a fibrous character, and that under the microscope they frequently show evidences of sarcomatous degeneration.

Marmaduke Shield[4] records a case in which extensive malignant disease was found underlying a common myxomatous polypus which presented the peculiarity of rapid recurrence and frequent bleeding.

Bowlby[5] mentions three cases of nasal sarcoma, two of which were at first thought to be instances of common polypi.

Regarding the treatment of intra-nasal sarcoma, an operation should be undertaken when there is the least prospect of being able to remove the whole of the growth. The prognosis in nasal sarcoma is somewhat more favourable, I think, than in nasal carcinoma, although of course it must always be very guarded. Removal of portions of the tumour tend only to accelerate its growth. Operative measures must be radical to be of any avail. The nasal passage must be freely laid open, and every portion of the growth carefully removed.

Mr. LENNOX BROWNE asked whether there had been any previous microscopical examination of the growth? (Dr. MILLIGAN said that he believed not.) He thought it behoved specialists to submit to microscopical examination more of these supposed polypoid growths, to see how early this degeneration took place. It was of course very difficult to say whether or not the degeneration was the result of previous operative irritation, and he had purposely been very guarded in his utterances on this subject. He himself could recall two cases of the kind. He asked whether anything further was heard of the uterine trouble. (Dr. MILLIGAN said it was a simple polypus of the uterus, and there had been no recurrence.) He observed that the case was an example of what had been termed the "polypoid diathesis." With respect to the practice of douching the nasal cavities, he said it had long been given up by rhinologists as contributing to the causation and recurrence of the diseases it was intended to relieve.

Mr. GEORGE STOKER had seen two cases which he thought were of interest in reference to Dr. Milligan's paper. One was that of a lady, who for several years had suffered from hæmoptysis, occurring usually in the morning. About the time the bleeding began she had had pneumonia, and tuberculosis had been diagnosed; but beyond the hæmoptysis there were no indications of pulmonary disease. On examining her nose he found a large spongy mass springing from the posterior part of the left

[4] "Lancet," July 4, 1891.
[5] "British Medical Journal," March 21, 1891.

inferior turbinal; it was extremely vascular, and bled freely on the slightest touch. A small portion of the growth was removed with the cold snare, for microscopical examination. This was followed by some bleeding for twenty-four hours. When he proceeded to remove the growth as a whole the galvano snare was used, and but little bleeding ensued. That was in August last. Since then the hæmoptysis had greatly decreased, and the patient's general health had much improved. However, the growth had recurred, but it did not now present the same appearances as at first: the rough, corrugated, wrinkled character having given place to an appearance more like that of the normal condition of the inferior turbinal. The other case was that of an old woman, over seventy years of age. On examination a large spongy mass was seen filling the left nostril. A small piece was removed for examination. The removal was followed by profuse bleeding, and it was necessary to plug the nose. A few hours later a piece of soft, friable tissue passed through the naso-pharynx into the mouth. The growth proved to be a sarcoma, but in view of the age of the patient no operative interference was thought advisable. Nine months later the patient was still alive, but he had no further news of her condition.

Mr. BARK (Liverpool) related two cases of intra-nasal growth of a malignant nature. The first occurred eight years ago, and resembled the case narrated by Dr. Milligan. The patient was a man, aged forty, who came complaining of nasal obstruction and recurrent attacks of hæmorrhage. There was a large fleshy mass filling up one nostril, growing from the outer wall of the nasal cavity. A piece was removed by the snare, and proved to be microscopically round-celled sarcoma. He was at that time much fonder of radical measures than he is now, and he therefore removed part of the superior maxilla. The patient did well for twelve months; then recurrence took place in the orbital plate, extending through the sphenoidal fissure to the cranial cavity, and death ensued. In this case there had been no other operation performed.

The second case was of a growth filling one nasal cavity, which a general surgeon tried to remove with forceps a month previously, causing profuse hæmorrhage, lasting about three weeks. Microscopical examination of the growth showed it to be an adeno-carcinoma. It sprang from the roof and the outer walls, and had extensive attachments. The patient wished the snare to be used, but he explained to her that recurrence was to be apprehended unless radical measures were adopted, and he suggested removal of the superior maxilla. She asked time to consider, and three weeks later he heard that she had died from brain complications. In this case the operative interference was too recent for there to be any reason to suspect that it had any influence in altering the character of the growth.

Mr. WYATT WINGRAVE observed that the differential diagnosis between polypus and myxo-sarcoma, for example, was at all times very difficult, even with the aid of the microscope. Referring to Dr. Milligan's specimen, he believed it to be merely mucoid hypertrophy of the mucous membrane. The growth was composed of connective tissue fibres, with large places filled with mucoid material, in which were embedded large

cells such as are found in many other situations. The only evidence in favour of a diagnosis of sarcoma was that the cells were remarkably uniform in size, but he had observed that same condition in a specimen removed from a case of atrophic rhinitis (specimen exhibited); and he did not think that it was possible to distinguish between the two. He submitted, therefore, that one is never justified in stating definitely that a growth was malignant on the strength of a microscopical examination. It was otherwise, of course, if they came across a characteristic arrangement of epithelial cells in situations where no epithelial cells ought to be, but where the arrangement of the cells was compatible with normal structure no such conclusion was justifiable.

The specimen was described as an angioma, but while he admitted that there was an abundant supply of blood-vessels he did not think that there were sufficient to constitute an angioma. These vessels had very thin walls, and this explained the hæmorrhage that resulted on removal of a portion of the growth. They could not believe in sarcoma growing without irritation of some kind, consequently it seemed highly probable that operative irritation might provoke the malignant transformation. He objected to the use of the term sarcomatous "degeneration" as applied to a polypus.

The PRESIDENT had had a case resembling the one mentioned by Mr. Stoker. The patient, a strong country woman, came to the hospital complaining of obstruction of one nostril, with severe hæmorrhage from time to time, the inferior turbinated bone being covered with an extremely vascular villous growth. He attempted to remove it with a snare, but just when he had seized it the patient grasped his arm and pulled, with the result of dragging away the growth together with the inferior turbinated bone.

Mr. LENNOX BROWNE remarked that there were several points of interest in Dr. Milligan's case which he had so graphically described; the first was that of the polypoid diathesis, so to speak, to which he himself had drawn attention in his book, having found not only that patients with nasal polypi had often similar growths in other parts of the body, but that there was also a frequent family tendency to new formations in several members of the same family.

Mr. Lennox Browne had only seen two cases of malignant disease of the nose, one long the subject of operation for recurrent polypi believed to be benign, and another in a patient who attributed his nasal disease to the frequent passage of an Eustachian catheter.

Allusion had been made to crude methods of operating as being possible etiological factors of malignancy, and on this point it was interesting to refer to a lecture published in the current number of the "British Medical Journal," in which the writer considered that "in "removing nasal polypi of any size . . . it is essential to introduce the "left forefinger into the posterior nares, so as to guide the forceps." And that when "the nostrils are once sufficiently cleared they should be thoroughly irrigated."

Mr. Lennox Browne ventured to think that in the first place a good speculum and a brilliant light were far more essential for success in

these operations than the use of the finger behind the soft palate, and of course these two measures could not be employed together; further that specialists were not content until the last morsel of polypoid growth had been removed, and lastly that irrigation and douching had long since been given up by rhinologists as contributory to formation and recurrence of the disease it was intended to relieve.

Dr. MILLIGAN, in reply, said he was very much interested in the various cases of the kind narrated by the speakers. He remarked, in answer to Mr. Wingrave, that the growth bore more resemblance to an angio-sarcoma than to an adeno-sarcoma. He agreed that it was not wise to rely exclusively upon the results of a microscopical examination, but rather upon the clinical features and the effect of operative measures.

Dr. W. MILLIGAN.—*Case of Malignant Disease of Tonsil.*

W. B., aged forty-nine, came to the hospital complaining of pain and difficulty in swallowing, and also of occasional sharp-shooting pains in the left ear. His symptoms had really lasted for about nine months, although it was only during the previous week that he had suffered to any considerable extent. He was somewhat emaciated, and had an anxious and careworn expression. There was nothing special to note in his previous history. He denied ever having had syphilis. He smoked in moderation, and at no time had he been addicted to drink. None of his relatives, so far as he knew, had ever suffered from malignant disease. On examination the left tonsil was found considerably enlarged and very hard. The surface of this hypertrophied portion was occupied by an irregularly shaped ulcer with overhanging edges. The base of the tongue upon the left side was occupied by two or three nodules of suspicious appearance. In the sub-maxillary region there were several enlarged lymphatic glands. He stated that he expectorated a considerable quantity of fœtid material, and that on several occasions this had been freely mixed with blood.

The clinical appearances and the history of the case pointed to the probability of the growth being of a malignant nature, and careful examination inclined one to the belief that the tonsil had been primarily involved.

It was decided, however, to at once give iodide of potassium and mercury, in the hope that the growth might possibly be of syphilitic origin. An antiseptic mouth-wash was also ordered. For a short time after this he suffered very little pain, but the appearances of the part underwent hardly any change.

A portion of the growth was removed and examined microscopically. It presented the appearances (although somewhat ill-defined) of epithelioma.

The patient was advised to submit to an operation, as at this stage it was considered possible to remove the affected parts. This, however, he declined to agree to.

Iodide of potassium and mercury were continued, and insufflations of morphia were ordered when the pain became very severe. The patient, however, rapidly lost weight, and the pain and the dysphagia became

more severe. Six weeks after this he returned to hospital, and stated that he now desired to undergo an operation. He was accordingly sent to Mr. Wright, of the Manchester Royal Infirmary, for his opinion about the feasibility of operation at this stage. The disease had by this time made rapid strides. The whole of the base and left side of the tongue in its posterior one-third had become involved, as also the palatine arches, a portion of the soft palate, and a small portion of the mucous membrane covering the upper jaw. The patient begged that an operation, however dangerous, should be performed, as his sufferings were now very extreme.

Accordingly, on January 22nd, the patient was put under chloroform, and laryngotomy was performed. A tube was introduced, and the anæsthetic continued through this. An incision was made along the border of the left sterno-mastoid muscle, and the external carotid was ligatured. Another incision was then made, from the angle of the jaw to the symphysis. Some enlarged glands in the sub-maxillary region were now removed. The mouth was held open with a gag, and the pharynx plugged with sponges. The whole of the tongue was next removed, as also the left half of the soft palate, the uvula, the tonsil, the lateral wall of the pharynx, and a small portion of the upper jaw. A drainage tube was now passed into the mouth from beneath the jaw, and the skin wounds stitched up. The laryngotomy tube was retained *in situ*. The sponges were removed from the pharynx.

The after treatment consisted in frequent syringing, and in the use of a mouth-wash containing Condy's fluid, and in the application of iodoform paint three times daily. Fluid food and stimulants were freely given. For the first three days he was fed by enemata every four hours, along with milk and brandy by the mouth. On the third day he was fed through an œsophageal tube. The laryngotomy tube was removed on February 1st, the drainage tube on February 4th. On February 9th he was sent to the Convalescent Hospital. Three days after his arrival there was slight hæmorrhage from the mouth. This continued, and he died on February 18th, twenty-seven days after the performance of the operation. At the *post-mortem* a small orifice in the floor of the mouth was found leading into the carotid artery, which was much inflamed.

Remarks.—Malignant disease of the tonsils is stated in most text-books to be of rare occurrence. I am inclined to think, however, that the disease is not so rare as it is usually represented to be, and to think also that the nature of the disease is not uncommonly overlooked, being mistaken at times either for some chronic inflammatory condition, or for some syphilitic deposit.

The varieties of carcinoma in this region in their order of frequency are—

(1) Encephaloid.
(2) Epithelioma.
(3) Scirrhus.

Newman, in a collection of ninety-two cases of true carcinomatous diseases of this region, found epithelioma in twenty-four, and scirrhus in seven cases. One or both tonsils may be affected. The disease makes

rapid progress, and the average duration of life is seldom more than eighteen months. Unfortunately, the true nature of the disease is at times only recognized after the surrounding parts — especially the lymphatic glands—have become affected. The prospects of success following any operative interference are now somewhat meagre, and all that can be done in many such cases is to promote the euthanasia as peaceably as possible.

In other instances, however, where infiltration of neighbouring parts has not taken place, the surgeon has to consider the *modus operandi* for each special case. The growths may be attacked either through the mouth or by an external incision after a preliminary tracheotomy in some cases, without in others. Whichever method of procedure the surgeon chooses to adopt, very free removal of tissue is demanded. Where palliative measures alone are indicated, the insufflation of morphia and the use of alkaline or astringent sprays should be adopted.

Mr. LENNOX BROWNE said that in all radical measures the first step should be the ligature of the main artery. In spite of that, however, many of these cases died of secondary hæmorrhage. He recalled the circumstance that when in 1879 he showed two cases of cancer of the tonsil and two of the larynx in one evening at the Pathological Society, the then president remarked on what he believed to be the easy confusion between syphilis and cancer. Whereupon he (Mr. Browne) had insisted upon the many marks of difference and distinction which ought if recognized to enable the observer to guard against such a mistake in diagnosis.

Mr. WINGRAVE said he had noticed three distinct varieties of epithelioma occurring in the tonsil. He had never met with a case of scirrhus. The stratified he had found to be most common.

Dr. MILLIGAN in reply admitted that he himself had never seen a case of scirrhus of the tonsil, but Newman recorded seven out of ninety-two. The essential point was to place in relief that there was such an affection as primary cancer of the tonsil.

Dr. DUNDAS GRANT.—*A Case of Submucous Hæmorrhage in the Vocal Cord, and Vascular Tumour of the Cord.*

A young lady, aged twenty-four, was brought to me on the 17th of October, 1891, on account of the sudden occurrence of hoarseness and loss of voice. This had taken place several times previously, and was usually brought on by a fit of sneezing, or some vocal effort. The condition generally lasted for about a fortnight, and gradually subsided.

On the occasion of my first seeing her I found the left vocal cord entirely covered by what looked like a thick coating of blood-clot. It was not dislodged by coughing, and was obviously situated under the mucous membrane ; it projected over the opposite cord during phonation.

The patient is tall, but not very vigorous, and suffers from backache. She has rather a narrow upper jaw, the lower jaw being somewhat underhung. Her nasal respiration is fairly free, but her mouth is occasionally dry in the morning, and the veins at the base of the tongue are somewhat larger than the average. I investigated the nature of the affection, and failed to elicit any evidence of a hæmorrhagic diathesis. I recom-

mended constitutional remedies, chloride of zinc spray, eucalyptus lozenges, and eucalyptus ointment for the nose.

She did not present herself again till the July of this year, when she came suffering again from extreme hoarseness and partial loss of voice, which had come on suddenly a week before. On examination I found the same appearance as before, with the exception that the redness stopped short at the vocal process posteriorly, and the prominence was most marked at the junction of the anterior and middle thirds of the cord. I advised the same treatment as before, and applied chloride of zinc by means of the spray apparatus. A few days later (21st July) her voice was considerably clearer, the outer third of the vocal cord was much paler, the hæmorrhagic patch was in general lighter and more transparent. The mucous membrane in the affected region was much looser, and flapped freely during respiration. On the 25th there was only a narrow strip of redness, limited to the edge of the middle third, and part of the anterior third of the cord, surmounted by a well-circumscribed tumour of the size of a hempseed, of irregular surface, bright purple colour, and attached by a broad base to the upper surface and edge of the cord. She has had frequent applications of chloride of zinc by brush and spray, and the cord is quite normal, except at the junction of the anterior and middle thirds, where the vascular tumour described is situated.

It is difficult to decide upon the order in which the events in the larynx have taken place, but I am disposed to think that the tumour preceded the hæmorrhages, and that the latter have been the results of the submucous rupture of the vessels of the neoplasm.

The case is interesting, clinically, as showing an unusual cause for recurring attacks of aphonia and hoarseness.

I am sure, Mr. President and gentlemen, you will join with me in my feeling of indebtedness to the young lady for kindly consenting to allow me to bring her and her most interesting case before the Association.

At present the growth has slightly diminished in size, but the question is whether to deal with it radically by means of forceps or galvano-cautery. Although I am rather opposed to the use of cauteries in the larynx, as a general rule, I am inclined to consider this a case in which it is peculiarly indicated, seeing the obviously vascular nature of the growth.

Dr. DUNDAS GRANT.—*Cases of Tumours of the Larynx removed by means of the Safety Endo-Laryngeal Forceps.*

The instrument employed in these cases was shown to the Association on the occasion of the last annual meeting. I have used it with satisfaction in several cases, and beg to offer the following brief notes :—

1. Miss C., who is present to-day, came to me on the 28th of last January, complaining of huskiness and loss of voice, and a tired and aching feeling in the throat, which had lasted for two years. On laryngoscopic examination I found a small, smooth, sessile growth of pink colour, on the edge of the right vocal cord, at the junction of the anterior and middle thirds. There was slight congestion of the part of the opposite cord with which it came in contact, otherwise the larynx was absolutely normal. She was very intolerant of laryngoscopy, but I made several applications

of a ten per cent. solution of cocaine, and then attempted to remove the growth. At the first insertion of the forceps I caught the growth and employed traction, but there was so much resistance that I hesitated to employ sufficient force to tear it away without further inspection. On examination I found that there was oozing of blood from the apex of the growth, which I had obviously grasped most accurately, and stripped of its superficial layer. I ordered a cold compress, and saw the patient two days later. I then seized the growth as before, and forcibly removed it. There was left a very slight but recognizable concavity on the edge of the cord, but the voice became at once distinct. The throat was slightly painful, but in two days under cold compresses this symptom disappeared. Applications of chloride of zinc were made at short intervals, and the voice was practically completely restored. She went home to Lincolnshire, and, at my request, returned to show herself. The voice was then rather feeble, and each vocal effort was preceded by a little nervous "hem," hardly amounting to a cough. By an effort of will she was, at my direction, able to dispense with this preliminary, and when instructed to breathe—as she did most intelligently—by means of the diaphragm, after the manner formulated by our much valued deceased fellow-worker, Emil Behnke, spoke in a loud and vigorous manner. The laryngoscope revealed a slight congestion of the vocal cords, but no trace of the tumour, the site of which could hardly be guessed at, and certainly could not be sworn to. To-day her voice is clear, though not musical, and there is no return of the growth. The microscopic section made by Dr. Holloway shows the size of the growth, which turned out to be a fibro-papilloma.

2. Mr. N. W., a gentleman in the employ of one of the first house agents and furnishers in London, was sent to me by a surgical colleague on the 5th of last September. He complained of extreme hoarseness, which came on with a cold, and had lasted for eight months. He was easily fatigued on talking, and had a slight embarrassment in breathing, which, however, was not present on the occasion on which I saw him. On laryngoscopic examination I found a small, irregular, sessile growth on the middle of the edge of the right vocal cord, about half the size of a hempseed. I cocainized the larynx, and at the second insertion of the forceps removed the growth, leaving the contour of the vocal cord apparently perfectly straight. There was also a tiny projection below the anterior commissure, but this was so small that I considered it quite unjustifiable to attack it, seeing also that it caused no inconvenience. The voice was completely restored, and I sent him back to his former attendant with instructions to have astringents applied to the sub-commissural swelling.

On the 4th of October he wrote to say that his voice sounded quite well, and his doctor said there were no signs of the late growth. The growth was found to be a papilloma.

Removal of Portions for Microscopical Examination.

3. S., aged sixty-six, came to me on October 3rd, 1891, complaining of intense persistent hoarseness of two months' duration. He had

occasionally pain "round the neck" when he put his head back, but none in swallowing, and no difficulty in breathing. His occupation involved much shouting in the open air, and this had occasioned numerous attacks of hoarseness. He had no cough, and no loss of flesh, had no family history of phthisis, but primary syphilis, without secondary manifestations, thirty years before.

On laryngoscopic examination there was seen to be a sessile, papillated growth of a bright pink colour on the middle third of the left vocal cord. There was no impairment of mobility, no pain, and no glandular enlargement.

A portion of the growth was removed, and the section presented the appearance of a papilloma. A temporary improvement followed, but regrowth and extension took place, accompanied by diminished mobility of the cord, and occasional pains shooting up to the ear. The evidence of the malignant nature of the disease was almost complete, and was made more so by the examination of another piece of the growth, which was rich in cornified epithelial cell-nests. Unilateral laryngectomy was performed by Mr. Sutton, but unfortunately the patient sank rather suddenly a few days after the operation.

4. In a case under the observation of Mr. Jakins and myself there was a tumour, projecting papilloma-fashion from the right vocal cord of a woman of thirty-three. There had been previous repeated endeavours at removal of the growth by means of forceps, by another laryngologist of undoubted skill, who had also applied the galvano-cautery a number of times. The growths certainly infiltrated the cord, and the movements were impaired. We succeeded with great ease in extracting a portion of the growth by means of the safety forceps. On section Dr. Holloway found sufficient evidence to justify a diagnosis of epithelioma.

Dr. GRANT related several cases of tumour of the larynx, of which he had effected the ablation without difficulty by means of the instrument which he brought to the notice of the society at a previous meeting.

Dr. GRANT.—*A Case of Post-Diphtheritic Paralysis of the External Pterygoids and other Muscles of Mastication.*

Charles S., aged thirteen, presented himself at the Throat and Ear Hospital complaining of inability to masticate food, or to protrude the lower jaw. In order to break up his food he has to work his jaw by means of his hand. The affection had lasted for about fourteen months, dating from an attack of diphtheria. He had for a short period a regurgitation of fluid through his nose when drinking, and a disturbance of speech, but no impairment of vision.

His mouth is partially open, and the jaw is displaced in such a fashion that the lower teeth are considerably behind their corresponding upper fellows. He cannot close the mouth by muscular effort, protrude the jaw, nor work it from side to side. It may be remarked that there is no tendency to accumulation of food between the gums and cheeks. The movements can be passively performed with the greatest ease, the condyle of the jaw working very loosely in its socket. The soft palate shows no

well-marked dimple to indicate action of the tensor palati, but elevation takes place, and the uvula contracts on irritation.

The patient believes his taste and hearing to be perfectly normal.

My colleague, Dr. de Watteville, has kindly taken the case under his care for suitable electrical treatment, and he has permitted me to show it to-day as one of the rare sequelæ of the dire disease we have so often to treat.

Mr. LENNOX BROWNE.—*Case of Palatal Paralysis, following (probable) Diphtheritic Rhinitis.* (From notes by Dr. Holloway, Registrar.)

R. W., female, aged forty-five, applied at the Central Throat, Nose, and Ear Hospital, as an out-patient, December 5th, 1892. Married twenty-three years. Nine children, of whom five are now alive, and four died from pertussis or bronchitis. Father died of old age. Mother alive and well. No brothers or sisters.

The patient, who is a thin, spare, somewhat anæmic person, has been unusually free from disease and ailment of any kind since her twentieth year, when she had variola; otherwise she has always enjoyed good health. Her present illness dates from the first week in November, when she caught a severe cold, which was confined almost entirely to the head. She was not quite rid of this when she caught another cold, this time affecting her chest as well, and she had a troublesome cough, but at no time has she had the slightest sore throat. She gives an account that one day during the second attack she blew down from the right nostril a membranous tube of a greyish-yellow colour, which was followed by slight hæmorrhage from the same nostril. Very shortly after recovery from this second cold, viz., three weeks ago, she first found some difficulty in articulation, stating "that it felt as if the back of her throat had got so swollen that she could not get her words out." A day or two later she found that in attempting to swallow fluids, they returned through the nostrils, and this symptom is still present. Added to these difficulties in articulation and swallowing, she has also experienced some defect in vision—as evidenced by difficulty in threading her needle and in reading—since the last fortnight. Beyond some shortness of breath on exertion, and slight occasional cough, her general health has not suffered, nor has menstruation been interrupted. She can give no history of exposure to foul smells, and is unaware of any fault in the sanitary condition of her dwelling-place.

On examination, the right tensor palati is found to be much more sluggish in its action than the left, though both are impaired, while the levator palati is generally paretic; there is no diminution of reflex sensibility. Nothing abnormal is to be seen in the larynx or in the nostrils. Her voice has the characteristic nasal tone of one suffering from post-diphtheritic paralysis, and this is the diagnosis which has been made.

Remarks by Mr. LENNOX BROWNE.—The clinical history is lacking in several details that would add to its interest, but there can be but little doubt that it points to a localized diphtheria of the nares, with little or no constitutional disturbance during the attack, but with sequelæ indicating a constitutional infection. Notice should be taken of it, as one more

illustration of the warning I have often enforced, but which is not even yet sufficiently realized, that the local symptoms of diphtheria in adults are often so slight as to escape recognition, and are only realized at a subsequent period when contagion may already have been conveyed to others. [The patient was exhibited.]

Dr. DUNDAS GRANT.—*Case of Antral Disease illustrating Transillumination.*

Mrs. O., aged fifty-five, has been under my care with the now familiar typical symptoms of empyema of the right antrum. The diagnosis was confirmed by means of puncture and irrigation, according to Lichtwitz's method. She was relieved to such an extraordinary extent by this exploratory irrigation that I abstained from any further operation for the time. Re-accumulation naturally took place, and I had the antrum opened through the alveolus of an extracted carious stump. Recovery has been delayed by the occurrence of suppurative otitis on the same side, and erysipelas of the auricle on the other, so that she is still a suitable subject for the demonstration of the transillumination process. You will observe a distinct almond-shaped spot of light below the left eye, which is quite absent under the right one.

In a similar case in the person of a gentleman under my care I found the same appearance, and the patient himself was conscious of more light reaching his eye on the sound than on the affected side.

It must be remembered that the translucency does not reappear at once on the evacuation of the pus, the thickening of the mucous membrane, and possibly the plastering of the walls with the denser constituents of the fluid, keeping up the relative opacity.

I would ask you to compare with these appearances the average appearance as seen in the patient I have brought to illustrate disease of the frontal sinus. In him the orbital lunæ are distinct, and the creamy, antrum-like pus in his left nostril comes from a different source.

Instead of darkening the room I have borrowed a hint from the photographer, and use a dark cloth over my head and that of the patient, just as the photographer does over the camera. This enables one to avoid the great inconvenience of darkening the room to the complete extent necessary for satisfactory transillumination.

I have used the method in several cases with equally clear results, and I should consider translucency a quite sufficient evidence of the absence of pus. As a positive evidence I should attribute to it only a relative value, and should rely upon the confirmatory results of Lichtwitz's puncture. It is a process, however, which is absolutely unobjectionable to the patient, is—if you wish it so—most impressive, and, as I have said, of some value as a positive, and very much more as a negative, test.

Dr. Dundas Grant demonstrated on this patient the method of "transillumination" as applied to the diagnosis of purulent effusions into the antrum. By the introduction of a small electric lamp *ad hoc* into the mouth, the light being screened off by throwing a cloth over the heads of the observer and the patient, the region above the antrum on the non-

affected side appeared translucent. On the affected side, on the contrary the translucency was absent.

PRESIDENT'S INAUGURAL ADDRESS.

Dr. ARTHUR SANDFORD (Cork).

My first duty as President of the Laryngological Association is a pleasing one, being to express to you my sincere thanks for the great honour you have conferred upon me in placing me in this distinguished position. When I consider the world-wide reputation of some of my illustrious predecessors, I am keenly sensible of my own unworthiness to fill the post to which your kindness has elected me, but at the same time I am filled with the determination to do all that in me lies to emulate the best traditions of the chair, and to advance the interests of this Association by every means in my power.

In order to give an early proof of my sincerity in this respect, and doubtless to your great relief, I shall make my introductory remarks as brief as possible, believing, as I do, that the spirit and aim of a society such as ours is shown in honest, earnest work, and not in the exhibition of elaborate compositions.

Last year, when my immediate predecessor occupied a similar position, a tone of sadness was imparted to his address by his touching allusion to the recent loss of one whom—whatever other attributes friend or foe may endow him with—all the world acknowledges to have been a distinguished laryngologist; and, in this capacity at least, we, the members of the Laryngological Association, cherish his memory, whilst we reap the fruit of his genius, and profit by his life-work.

To-day, I am glad to say, no cloud shadows the brightness of our year's retrospect or dims the brilliant prospect opening for our Association—a prospect which justifies the most sanguine anticipations of a successful future.

The record of the past twelve months' work is one of which any scientific society might well feel proud. Animated discussions upon subjects of general interest, demonstrations of the results of elaborate and accurate original research in several tracts of knowledge hitherto unexplored, with valuable contributions of interesting cases from various parts of the United Kingdom—all mark emphatically the vitality of our Association and the enthusiasm of its members, whilst giving incontrovertible proof of the advantages which scientific treatment must derive from a society such as ours.

In the healthy atmosphere of open discussion the faddist hears his fads discussed with a candour which, if not always agreeable to his feelings, cannot fail to exercise a salutary influence upon his practice; and sometimes, possibly, may rend the veil of paternal affection through which he regards some cherished idol amongst his intellectual progeny.

Here the severe specialist and the generalist with specialistic tendencies meet upon equal grounds, and as each puts forth his strength to prove the superiority of his views, wise men gather what is best of each, and combine their application to the discomfiture of disease.

Valuable as our Association is upon general grounds, as concentrating into one channel the scattered forces of isolated effort and of individual experience, the personal advantage reaped by its members is inestimable. Especially is this the case with those whose lot it is to work at some of the outposts of scientific research. For myself, I am sensible of the deepest gratitude for the benefit I have derived from my attendance at our meetings—often accomplished in the face of difficulties of which the geographical distance was the least—and I cannot speak too warmly of the pleasure I have felt at the invariable kindness I have at all times experienced from the members of the Association.

There is one subject upon which I am anxious to speak briefly to-day. It was broached at Nottingham by the President of the Laryngological Section of the British Medical Association meeting, held in that city. Our best thanks are due to him for having called attention to this subject, and also to the several subsequent speakers who alluded to it. I refer to what was designated as "OVER-SPECIALISM."

As was then pointed out, there are, without doubt, at the present time evidences of the existence—even amongst specialists—of a feeling that certain subjects are "over-specialized," and this feeling is quite distinct from that which prompts the feeble sneers of unenlightened ignorance, with which we have from time to time had opportunities of becoming extremely familiar. The subject is not one to be hastily dismissed, for, without doubt, momentous issues are involved therein.

There are two forms in which this phantom may appear—either (1) over-specialism in the selection of a limited field for scientific research; or (2) over-specialism in the exclusive application of local treatment.

With regard to the first, for my own part, I believe that so far as the interests of science are concerned, and regarding only the great sum of scientific knowledge—apart altogether from the individual whose work contributes towards increasing it—it is quite impossible for any subject to be "over-specialized." The more men's minds are concentrated upon any particular point, the more will every available source of information be tapped, until the truth is at last dug out.

I believe, for instance, that if every individual bacillus known to exist in the wide preserves of the bacteriologist had an individual hunter upon its trail who made its life-history his special quest, and scientific truth the Holy Grail which inspired his efforts, this subject would hardly be over-specialized—so far, at least, as the acquirement of accurate scientific information is concerned. Nor is the illustration so extravagant as it may appear; for it is within my recollection that during the last session one of our most distinguished Fellows, in an able paper on the "Etiology of Affections of the Upper Respiratory Tract," confessed that one of the great difficulties he experienced was the enormous mass of unclassified material met with in his microscopic slides, and complained that life is too short for any one man to hope to separate, follow up, and apportion to its proper place the number of organisms thus grouped together in confusion. Here a number of specialists exclusively devoted, each to his own line, would have a better chance of ultimately forming a systematic basis of enquiry. Whether such a limited pursuit would "pay," in the

vulgar sense of the word, is quite another matter. Probably the "pleasure of pursuing" would represent the larger portion of the pursuer's material gain. But, in a few years, what a wealth of distinct facts would be crystallized out of chaos, and what a very different appearance the realms of bacteriology would present to the humble individual approaching their confines for the first time!

Incipient prejudice with regard to over-specialism is, I believe, partly a sort of reaction due to the rapidity with which now-a-days every scrap of information becomes at once common property, and so generally familiar that one is apt to forget that to the concentrated energy and active enterprise of the specialist is due the credit of having first brought it to light. The feeling is also partly the result of observing the unavoidable discomfiture which must at times attend the tentative efforts of pioneers in an unknown country, whose glory is to push their researches beyond the limits of beaten tracks. Every atom of solid information thus gained is at once grasped by a host of keen observers; but when the explorer, carried away, it may be, by that enthusiasm and self-reliance without which he would not have dared to leave the well-known lines, meets with failure or disaster, his personal reputation may suffer—but science is the gainer.

Those who sit in safe seats, timidly longing perhaps for some means of overcoming a long-standing difficulty, might at least feel grateful to others who, by making the fatal plunge, show how far it is safe to go—even by the failure of their efforts.

With regard to the second form which so-called "over-specialism" may assume, viz.—in the treatment of all local affections by exclusively local remedies, without due regard to co-existent local or general conditions, which perhaps have originated, still influence and possibly exaggerate the malady for which the patient seeks relief. This is a species of "exclusive dealing," which like all other examples of that obnoxious principle, is sure sooner or later to recoil upon the head of him who practises it. Those who in this regard speak of what they call "over-specialism" really mean that occasionally false prophets arise, who, utilizing the discoveries of science with a single eye to their own advantage, treat their patients with invariable and unnecessary activity; or who, in priding themselves upon being nothing else than specialists, wilfully ignore the proved advantage of moderate accessory or collateral treatment, and sacrifice their patients to the exclusive application of novel or heroic remedies. This, however, is not *over*-specialism, but the *abuse* of specialism; and those who practise it may very well be left to the reputation which must inevitably attend upon such (to say the least of it) unskilful treatment.

One great duty of our Association is the discouragement of such principles, and it is right and proper that this influential body of specialists should speak out with no uncertain tone upon this subject. At the same time we should not allow any timidity regarding accusations of over-specialism to damp our determination and enthusiasm in working out the truth, and then in loyally applying our discoveries to the treatment of disease. The great aim of our Association is, whilst discountenancing all

attempts at quackery or the abuse of specialism, to foster every honest attempt to add one stone to the edifice of accurate knowledge.

Among kindred societies of specialists we have the sin of comparative youth to be laid to our charge, and we cheerfully embrace the fact—knowing, as we do, that with it we possess youth's best characteristics of keen enterprise, insuppressible vitality, and vigorous energy.

While other societies are compelled to go over again and again the same well-worn fields in the praiseworthy effort to extract any grains of truth overlooked by their predecessors, we have, in addition to this, fresh virgin soil, as yet almost untouched, where every day some new object of interest is discovered by the earnest seeker.

In malformations of the respiratory passages; in the influence exercised by these upon other morbid conditions, near or remote, reflex or direct; in the diagnosis and treatment of affections of the bony sinuses communicating directly or indirectly with these passages; we have before us unknown possibilities, which fascinate the imagination, and stimulate our exertions in pursuit of knowledge. I am convinced that in the recesses of these dark cells lie hidden the secret of many a so-called "neuralgic headache," "face-ache," or other more obscure troubles. The evident sympathy existing between these parts, and the functional activity of remote organs, with which no direct communication can be traced, as well as the manifest influence exerted by conditions arising in them upon the higher nervous functions—an influence extending beyond mere interference with the special senses, and reaching the mental faculties themselves—all point to potentialities in discovery, of which it is impossible to define the limit.

A very few years ago the nose occupied a position in surgery but little in accordance with the prominence given by Nature to that feature or organ. It was, I believe, until recently regarded only as a feature and not as an organ. It was only studied with a view to ascertain certain traits of character, presumably indicated by its outward shape and size.

Recently science has waked up to the fact that this apparently innocent appendage contains structures of vital importance to the health and happiness of the human race. For some time specialists in all parts of the world have been earnestly engaged in forcing the secrets of its most sacred recesses, and, in spite of ridicule and opposition on all sides, and notwithstanding the breaking down from time to time of some plausible theories, have steadily been making good their ground, and can now distinctly trace many obscure symptoms occurring in remote portions of the economy to morbid processes located in the nose, naso-pharynx and adjacent parts. As a result of this, many distressing symptoms, hitherto incurable, have been relieved by treatment directed to the primary seat of trouble.

Such is one example of the work of specialists, and there is no better instance of the difficulties which they have had to contend with than the way in which prejudice has persistently attempted to place obstacles in the path of advance in nasal surgery.

It is possible that in this advance there may be at times a tendency for enthusiasts to "overdo the thing," and to outstep the bounds of

reason and of common sense. Well, the results teach us at least the salutary lesson—*not* to do likewise.

Leaving this subject, I would ask you to bear with me for a few moments whilst glancing backward over the record of the past year's work. We have every reason to congratulate ourselves upon the success which attended our efforts, both as regards the work produced at our meetings and the increase of our numbers by the admission of many new members, whom we are glad to welcome. It is interesting, as well a profitable for future guidance, to consider for a moment the causes which conduce to this success.

In the first place, of course, our thanks are due to our late president for the interest he evinced in the practical working of the Association, as well as for the readiness with which upon all occasions he brought the light of his large experience to bear upon the various subjects under discussion.

In the next place, I believe our success is largely due to the energy and devotion of our late hon. secretary, Mr. Stoker, upon whose shoulders fell the lion's share of the routine work of the Association, in addition to the systematic arrangement and organization of our meetings, which he so successfully carried out.

And lastly, we have been singularly fortunate in the character and excellence of the communications brought to our meetings from various quarters, and the best thanks of the Association are due to those members, who in loyalty to the interests of science in general, and to those of our society in particular, brought the best and ripest of the fruits of their experience and individual work to enhance the value of our proceedings.

In this regard I am quite sure that I but feebly express the sentiments of every member of the Association in saying that we feel extremely and especially grateful to Dr. Macintyre, of Glasgow, for his able and interesting series of papers and demonstrations in connection with the subject of the "Bacillary Origin of Inflammatory Affections of the Upper Respiratory Tract." We feel very proud of having such work issuing from one of our fellows, and earnestly trust that during the present year we shall have still further proof of his genius, and of his extraordinary capacity for work at once minute and comprehensive.

Of other valuable contributions it is hardly right that I should occupy your time by selecting any for special comment. We have had an extremely interesting and instructive discussion upon the "Origin of Deviations of the Nasal Septum." And really, from the statistics brought forward by Mr. Mayo Collier in his able and exhaustive paper upon the subject, it would almost seem that so very large a proportion of the adult population are affected in this way, one might begin by an enquiry into the causes of a perfectly straight median septum as being the abnormal condition!

We have also had interesting discussions upon the "Influence of Nasal Stenosis upon Ear Troubles," the "Influence of Physical Voice-training upon Affections of the Vocal Organs in Public Speakers," with other communications too numerous to mention, and a valuable series of Microscopic sections.

Such an extremely satisfactory record in the past gives us reason to look cheerfully forward to our prospects for the session upon which we have just embarked, and the full programme before us this afternoon augurs well for the future so far as our meetings are concerned. And if the fellows during the coming year will do their duty by the Association as thoroughly and as loyally as in the past, I am sure I may promise for myself and Mr. Wingrave, that, as president and secretary, we shall do everything in our power to emulate our predecessors in devotion to the interests of the Association. Thus we shall endeavour to secure those three elements which so largely contributed to our success last year.

Whilst speaking of our prospects for the future is perhaps the most fitting time for me to inform you, as I do with sincere pleasure, that your council have to-day issued a cordial invitation to those first members who, for a variety of reasons, detached themselves from us some years since to rejoin this Association. Time the healer, and various changes following in his train, have done much to remove the causes of this cleavage in our ranks, and we venture to hope that our distinguished colleagues will again unite with us in making our Association all that it should be, and worthy of the great object for which it was originally founded.

There is but one point more to which I shall allude, and this is a contemplated "new departure" in the routine of our proceedings during the coming year. Having discussed the project with several of our colleagues, and it having met with their approval, it now gives me great pleasure cordially to invite the Association to hold their next summer meeting in Cork. I trust that many of our members will be able to attend, and I can assure them of at least a warm welcome.

I must not now further occupy your time, and intervene between the meeting and its proper work, but conclude by thanking you for the additional proof of your kindness which you have given in the patient hearing you have accorded me.

Dr. MILLIGAN said that with regard to the proposal to ask back those members of the society who had seceded, he thought it should be ratified by the whole of the fellows present. He regretted the secession, but he felt sure that their work would be more valuable if carried on in association with their fellows in this department. He felt certain that they would be received with every respect, and that all their work in the future would be carried out in a truly fraternal spirit. He concluded by moving as a substantive motion "That this meeting cordially invites those fellows "who had resigned their position in this Association to rejoin, and that "every endeavour be made to make the meeting friendly."

Mr. BARK (Liverpool) said that he was not old enough a fellow to remember the cause of the dissension, but personally he was very desirous of welcoming the fellows back to the Association.

The PRESIDENT, in replying, moved that the following action of the Council be heartily endorsed: "At a special meeting of the Council of "the British Laryngological and Rhinological Association, held on Dec. "8th, 1892, it was moved by Dr. Sandford (President), seconded by Mr. "George Stoker, and unanimously resolved that those members who

" withdrew from the Association some years since be cordially invited to " rejoin, in the interests of that branch of science which it is the special " object of the Association to advance."

This was seconded by Mr. Bark and Dr. Milligan, and carried unanimously.

Mr. LENNOX BROWNE, referring to the President's remarks on "over-specialism," said they should make sure that they were not fighting a bugbear. He did not know whether it existed in their own specialty; if so, he would like to know the names and addresses of the delinquents. It was true that one or two laryngologists had spoken very strongly against the galvano-cautery, but when any of their patients happened to come under him (Mr. Browne), he, in his turn, generally found that they had been cauterized pretty freely. There still existed some laryngologists who had learned what was then known of the science twenty years ago, and who thought that applications of solutions—chloride of zinc—comprised all local treatment, and to these gentlemen any further measure appeared as an "excess," but what they took for excesses were really representative of the advance of laryngological science. It behoved all specialists to welcome new suggestions, whencesoever they came, if only they gave promise of increasing their powers of alleviating suffering. There was one thing in particular that surgeons ought to beware of, and that was the so-called "crystallization" of experience, for it was but too often the first step in the "evolution of degeneration" to obstructive "fossilization."

The motion was then carried by acclamation.

The PRESIDENT announced that it had been decided, in virtue of the bye-law permitting the President for the time being to choose one meeting in a provincial town, that the meeting next summer should take place at Cork.

Mr. GEORGE STOKER said that if the meeting took place in Cork, he hoped the fellows and their friends would come to Killarney, and that it would give Mrs. Stoker and himself much pleasure if they would lunch with them at Dunloe.

A vote of thanks to the President for his address was then agreed to by acclamation.

Mr. MAYO COLLIER.—*The Surgery of the Frontal Sinuses.*

Mr. President and gentlemen,—Sir, it may be within the recollection of some now present that I was invited by the President and Council of the Association to lay before you at our last meeting any notes of cases or experience I might have had in the surgery of the frontal sinuses.

I accepted that invitation, but when I reflected how limited my personal experience had been—as, indeed, from the necessities of the case, it must be to most surgeons—I looked about me for materials with which I might make any communication I had to present to you at least worthy of this critical and expectant society.

A few words on the development, anatomy and physiology of the frontal sinuses will not be an unfit preface to any remarks I am prepared

to make on the surgery of these spaces, more especially as the text-books are phenomenally dumb on the subject, and little more than the bare existence of these spaces is known to most readers. The frontal sinuses, for there are generally two, are irregular cavities situated between the inner and outer tables of the frontal bone, near the root of the nose. In the recent state these cavities are lined by a thin, pale, closely adherent mucous membrane, and separated from each other by a well-marked septum. They communicate separately with the corresponding nasal cavity by an opening variable in size, leading into the anterior extremity of the middle meatus of the nose. Before proceeding further in detail with the anatomy of these spaces, a few words on the theory of the development of the frontal sinuses will not be out of place here. In the records of the transactions of the Provincial Medical and Surgical Association for 1833, vol. i., you will find a very able and highly suggestive article by Dr. Milligan, of Edinburgh, on this subject, also in his notes on Majendie's "Physiology," some pertinent remarks in the same direction.

To be as brief as possible, Milligan wishes to show that the functions of the two tables of the skull are quite different—that the inner table being moulded closely to the fissures and convolutions of the brain is mainly supporting and protective to that organ alone; next, that the brain arriving at its full state of maturity at seven years of age, the inner table ceases to grow or to expand after that date.

Not so the outer table, which is an irregular envelope, at some places as thin as a wafer, at others thicker than all the rest of the cranium. If viewed from without, we find that every particle of its surface is adapted to some purpose it has to answer in combination with the soft parts it is in contact with. Many prominences are levers for the muscles, others are scabrous surfaces for their insertions, others are condyles for joints, others organs of hearing, others organs of fixation, others of protection; and all this in direct reference to the organs of contact, but without the least relation that can be discovered to the encephalon. *Hence we are forced to conclude that its projections solely originate under the influence and for completion of functions that are all external to the cranium.* The evolution of the frontal sinuses does not take place till the seventh year, nor is it complete till the twenty-first year.

At the seventh year the bones of the face are yet small and childish, and the jaws are occupied by the first set of teeth. At this time the Wenzels inform us, from many observations, that the brain has arrived at its full magnitude. Up to this time the internal carotid artery was many times larger than the external, but immediately after full development of the brain has taken place a sensible diminution in its calibre occurs, and a rapid and large increase is apparent in the external carotid and its branches. The bones of the face, the teeth, eyebrows, and outer table of the skull now grow rapidly, and the internal table being at a standstill, large spaces occur between the tables of the skull, hence the frontal sinuses.

This then, shortly, gentlemen, is a not unreasonable explanation of the existence of these spaces. Reverting to the anatomy or topography of the frontal sinuses, I would now direct your attention to these three

diagrams taken directly from actual specimens, showing horizontal sections of the spaces, the age and sex of each being given. From these you will learn, as indeed you might expect from the process of development, that no two spaces are alike, and that the external appearance gives little or no indication of the size and extent of these spaces.

I will now pass round two dried specimens of adults from my teaching collection, showing extreme cases of these sinuses. In the one case you will observe an abnormally large irregular sinus on each side, in the other a total absence of any sinus spaces. The use of these spaces is probably as resonance chambers to the voice.

Now, sir, in reference to the surgery of the frontal sinuses, the records of the special hospitals for diseases of the nose and throat are almost blanks, but on the other hand, if you examine the reports from the various ophthalmic hospitals you will there find many cases of affections of these spaces.

This is accounted for by the fact that accumulations of fluid, be it pus, serum, or mucus, or what not, in ninety-nine cases out of a hundred bulge or perforate the roof of the orbit, and protrude at its upper and inner angle under the upper eyelid, usually causing diplopia as a prominent and often, to the patient, only symptom. The records of these cases are not a few, and the names of oculists are invariably associated with them. Hulke, Lawson, Sœlburg Wells, Bell-Taylor, and many others have each reported one or more cases.

By far and away the most common affection of these spaces is distension by the retention and accumulation of the products of nflammation.

The pressure of the retained fluids bulges the bony casement at its weakest point, namely, the roof of the orbit.

Cases are not unknown where the pus has pressed backwards, and, so entering the arachnoid cavity, has set up a fatal meningitis or abscess of the brain, or again, may rarely bulge and perforate the bone in a forward direction. Cases again occur where the accumulation is intermittent, the pressure due to retention forcing the normal passage into the nose. These cases are not marked by protrusion of the roof of the orbit, and, being free from any gross external signs to assist the diagnosis, are as a rule unrecognized. To this latter class of cases the term empyema of the frontal sinus is, I think, properly applied. The diagnosis and treatment of these two classes of cases is radically different.

In the former we have to make a diagnosis, and differentiate from distended lachrymal sac, dermoid cysts, exostoses, and new growths, whereas in empyema of the sinus our diagnosis to a large extent depends upon subjective evidence alone. In the one class of cases the first and only symptom may be a displacement of the eyeball associated with diplopia, but unaccompanied by pain or uneasiness at the root of the nose. Empyema of the frontal sinus is not necessarily associated with any other affection in the throat or nose (quoting from Prof. Ogston): "The onset is usually indefined, and patients have merely perceived that from a certain date without well-marked cause they began to suffer from uneasiness and pain in the situation of the frontal sinuses."

Headache at the root of the nose, varying in intensity but always present, is a main feature of these cases.

A discharge of pus, not abundant but variable in quantity, if looked for, may generally be made out.

Pus may also be sometimes found at the anterior part of the roof of the cavity, but is small in amount and rarely visible; pain or tenderness on pressure may or may not be present, but percussion with the fingers or a pleximeter generally elicits some uneasiness.

The character of the pain varies; it is not so much the intensity that is annoying as the constant presence of fulness associated with dull pain. Bending forward, stooping, or reading increases the trouble, and as a rule it is increased when in the recumbent position and after sleep. Dull, damp, and rainy weather increases the discomfort, but high altitudes, bright and dry atmospheres, improve matters considerably.

Many of these cases escape diagnosis, and are treated by the physician with bromides and iodides of potassium, shower baths, and the usual list of remedies for headaches without materially benefiting the case.

The surgeon having come to the conclusion on the evidence before him that disease exists in the frontal sinus can only hope to relieve his patient by procuring a proper vent, or by applications to the diseased mucous membrane, or both.

I have here the notes of several cases diagnosed, operated on, and cured, and in two of these cases diagnosed and operated on by Prof. Ogston, he states the mucous membrane was so granular it might be termed polypoid, being lined with soft gelatinous outgrowths, exactly like the common nasal mucous polypi of the size of a split pea or a little less.

To reach and effectually treat the frontal sinus by way of the infundibulum is out of the question; resort must then be had to opening the sinus in front, at the root of the nose, in the midline or at the inner and upper angle of the orbit—a strong and fatal objection to this latter procedure being that the empyema may be one-sided, and it is not as yet possible to make sure on which side the disease exists.

A detailed account of the procedure requisite to open the sinuses in front will now be laid before you.

The patient being anæsthetized, preferably by chloroform, and the interval between the eyebrows being divested of any hairs, and made scrupulously clean, a note is to be made of the exact spot in the midline, on the level of the upper margin of the orbit. This, for the purpose of the operation, may be termed the "pin spot," as it is the spot where the pin of the trephine is subsequently placed. An incision should be made exactly on the midline, commencing at the root of the nose, below the glabellum, and carried upward for about two inches. In this incision everything is divided to the bone. There is no hæmorrhage as a rule. Next, the pericranial covering is raised by an elevator, and retracted to each side with blunt hooks.

Bone to the extent of a five-shilling piece will now have been exposed. A trephine, with a crown the size of a sixpence, or less, should now be so placed on the glabellum that the pin of the trephine enters the bone at the pin spot. The trephine is worked in the usual way, with caution,

examining with a fine probe the depth of the incision after every few twists. As it is important to remove the button of bone without lacerating or opening the lining of the sinuses, great care must be observed during the last few twists of the trephine.

The trephine does its work first below, and there is always some difficulty in removing the button, the bony septum or arch dividing the sinuses retaining it above. By careful manipulation with an elevator the button of bone is detached, leaving the mucous lining of the sinuses intact.

One or both sinuses, according to circumstances, is next to be opened with forceps and scissors, and examined. Any secretion is to be removed, any disease of mucous membrane is to be treated by curetting and chloride of zinc—grs. 40 ℥j—to the whole lining membrane or any polypus removed, and its base destroyed by caustic or cautery. Above all things an opening must be established with the nose, and a drainage tube inserted and maintained in position.

Daily ablutions with antiseptic fluids will keep up a healthy action and assist a cure. The wound is to be accurately adjusted, the pericranium and pericranial aponeurosis, as well as the skin, being separately and accurately adjusted. The tube may protrude from the centre of the wound for the first few days, for the purpose of irrigation, but subsequently may be shortened or dispensed with entirely.

Well, the result of this operation is usually beneficial immediately. The patients lose their troublesome symptoms and are permanently relieved. The wound healing by first intention there is no scar or disfigurement, and the line of the incision is scarcely perceptible.

The method of treating the other and more common class of cases as illustrated by a protrusion and displacement of the eyeball is equally simple and satisfactory. Lawson, Hulke and others have laid down the rules and steps of the operation with great exactitude. An incision parallel with the eyebrow at the most prominent part of the swelling, followed by the introduction of the finger into the sinus and the evacuation of its contents, constitutes the first step of the operation. The next step is to find or make a communication with the nose and insert a drainage tube. This is best done by a stout probe or director thrust in the direction of the infundibulum till it appears in the nose. A firm but small drainage tube is next inserted and maintained in position for the purpose of irrigation and drainage. The mucous lining may be treated according to the necessities of the case and the tastes of the surgeon. The result is generally completely satisfactory, the eye regains its function and position, and little or no scar remains.

More rare affections of the frontal sinus, next to accumulations, are exostoses, polypi, and new growths, and the accidental introduction of foreign bodies, such as snuff, insects, larvæ, etc.

Exostoses are very rare, and are usually of the hard description. There is one specimen in the Hunterian Museum, a large one filling both sinuses, and protruding into the nose and orbit. The museum at Cambridge contains another specimen, and a third is to be found at Bartholomew's. Mackenzie had two small specimens—found, I believe, unexpectedly *post-mortem.*

Polypus of the frontal sinus is rare, but when occurring, is usually associated with the same disease in the nose. Unassociated with disease in the nose it is extremely rare. Mr. Hulke, in the *Lancet* of March 14th, 1891, reported several cases of polypi of the frontal sinuses, only one of which was unassociated with a similar state of things in the nose. These cases generally led to accumulations in the sinuses, and were not primarily diagnosed as polypi.

New growths are extremely rare, but sarcoma has been reported as presumably originating in these spaces.

Of insects in the frontal sinus, cases have been reported by Mackenzie and others. My own personal experience of diseases in the frontal sinus is limited, but three cases I will lay before you I think of more or less interest. One was that of a gentleman on the Stock Exchange, who after a pinch of snuff from the friendly snuff-box according to the old custom that prevailed at dinner parties, was seized in a few hours with intense frontal pain referred to the root of the nose, high fever, and some confusion of mind. The eyes were injected, and tenderness was apparent over the site of the sinuses.

I diagnosed acute inflammation of one or both sinuses, and with the help of aconite and morphia internally, and an ice-bag *in situ*, my patient speedily recovered.

The next case was that of a distinguished Alienist physician, lately living in Wimpole Street. He complained of dull, constant pain and fulness in the frontal region of several weeks' standing, accentuated and increased by bending forwards to read or for other purposes. A severe catarrh had preceded this state.

I diagnosed a collection of fluid in the frontal sinuses, and ordered a warm douche to nose with iodine, chloroform and carbolic inhalations. This was followed in a few days by a copious discharge of semi-purulent matter and recovery.

The third case was one of more interest. In the autumn of last year I was asked by the late Sir Morell Mackenzie to meet him and Dr. Major, of Montreal, in consultation over a case pointing to trouble in the frontal sinuses. I may preface my remarks by saying that the gentleman in question, who was a wealthy man, had been under the care of one or more of the specialists in most of the cities of America and the Continent. Each had had a shot at him, and lastly Fauvel, of Paris, sent him on to Sir Morell Mackenzie.

His symptoms were briefly these. For the last six years he had suffered from a more or less intense headache at the root of the nose, augmented by damp or rainy weather, but lessened by fine weather and elevated positions. On attempting to read with the head forwards, or paint, which was his favourite occupation, the annoyance of the pain was such as to force him to discontinue. In his own words, the discomfort was considerable.

The consciousness of continual pain, more annoying from its constant presence than from its intensity, was sufficient to render his life miserable and unfit him for ordinary duties. The nose and throat were apparently normal.

Well, sir, I met Sir Morell and Dr. Major in consultation, and with very little hesitation I came to the conclusion that the patient was suffering from either polypus, exostosis, or some inflammatory state of the lining membrane of the frontal sinuses, with probably intermittent accumulations, and I made bold to advise exploration of the sinuses from the front. Well, they agreed, and I did so. A vertical incision down to the bone in the manner previously indicated was my first step. This gave me ample room. On lifting the periosteum and retracting, bone to the extent of a five-shilling piece was exposed and appeared healthy. A trephine with the diameter of a sixpence was worked over the glabellum and a button of bone removed. The osteal surface of the lining membrane was now exposed, and was of an intense blue slate colour, and the line of the septum dividing the two spaces could be well made out. At this point a most remarkable pulsation with each respiratory act was noticeable, the membrane bulging forwards with expiration and collapsing with inspiration, exactly as occurs when the internal jugular or other great veins are exposed. Sir Morell and others present feared I had got on to the longitudinal sinus, but forceps and scissors soon demonstrated that I was within the frontal sinuses, that each sinus was patent, and that no disease was present. Well, sir, you will be glad to hear no harm was done; the line of the incision is now scarcely noticeable, and the gentleman left the Home fourteen days after greatly improved, and I believe this improvement is still maintained. It is seldom that a surgeon will be called upon to open these sinuses without some well-marked swelling, or other coarse indication of disease. If called upon I would venture to recommend the incision adopted by myself as the best.

The skin is divided in the midline, there is little or no hæmorrhage, and the occipito-frontalis is not divided; lastly, the wound when healed is scarcely perceptible, a matter of no little importance to the more particular of our patients.

Mr. LENNOX BROWNE.—*A Case of Suppuration of the Frontal Sinus.*

M. Y., aged sixty-three, a laundress, was admitted into the Central Throat, Nose, and Ear Hospital on March 21st, 1892. The patient stated that her family history was good, and that she had suffered from no serious illness except occasional hysteria and nervous debility. Five or six years previously she had noticed "a swelling just over the nose, between the eyes," which subsided with occurrence of a profuse discharge from the nostrils. With the increase of the external swelling there was also noticed an increase in nasal obstruction, while both symptoms—namely, that of protuberance, and of the stuffiness of the nose—were always relieved by a nasal discharge. This alternate enlargement and outpour continued to occur every six months or so till October, 1891, when the swelling burst, just over the inner and upper wall of the left orbit. Previous to this she had suffered great pain in the frontal region, with enormous swelling (œdema) of the eyelid. When these symptoms were at their worst she had, under a local doctor's advice, used poultices freely for several weeks. The acute stage subsided with the opening of

the abscess, but the discharge showing no evidence of cessation, she sought advice at the Cheltenham Eye, Ear, and Throat Infirmary, from which institution she was sent here by Mr. Frederick Smith.

State on admission.—General health, feeble; anæmic and painfully nervous; also somewhat morose and depressed in spirits. No paralysis. Locally, on anterior rhinoscopic examination, both nostrils are observed to be blocked, and the left one is so filled with dried discharge that the landmarks are quite unrecognizable; the right is seen to be obstructed by polypoid masses, but the turbinal bodies on each side are shrunken. Externally there is seen a small hole just above the left inner canthus, from which fœtid pus is discharged, and through which a probe passes an inch, in a posterior median direction, when it distinctly strikes dead bone; a probe passed up the left nostril in the direction of the infundibulum gives a similar indication of necrosis, while exploration of the orbital sinus likewise indicates bare bone, the probe passing three-quarters of an inch. With the ophthalmoscope the fundus of the left eye is of a normal appearance, and there are no cerebral symptoms to indicate deep lesion beyond more than usual apathy with irritability on being roused.

Operation performed on March 25th.—The patient having been anæsthetized, the frontal sinus was exposed by a horizontal incision immediately under the left eyebrow, and a vertical one in the line of corrugation, and to the inner side of the supra-orbital notch. There was no difficulty in finding the sinus, which being trephined was found to be full of pus, but on attempting to pass a probe in the direction of the infundibulum, it went far backwards and to the right. It was not thought desirable, seeing the extent of the mischief, to make further attempts to find or force an entrance into the nasal cavities. The right nostril having been cleared of polypi, a drainage tube was inserted through the opened sinus and the wound closed. The patient bore the anæsthetic well, and recovered from the narcosis, but was never thoroughly conscious. Coma supervened and she died in forty-eight hours.

Post-mortem Examination.—The thoracic and abdominal viscera were found to be practically normal.

On opening the cranium, pus escaped from between the dura mater and the frontal bone, the dura mater being found to be freely separated from the surface of the bone, about two inches above the orbital plate, and backwards to the orbito-sphenoidal region, that is, in fact, along nearly the entire surface of the anterior cerebral fossa. Over both the frontal and sphenoidal lobes flaky patches of lymph were found in the arachnoid.

The vessels of the pia mater were markedly congested. The left frontal sinus was greatly enlarged and contained pus and detritus. The external opening was found to be situated at the level of the orbital ridge. Internally there was seen to be a small ragged orifice, which led into the peri-dural space, about one inch above, and to the left side of, the crista galli.

The cribriform plate of the ethmoid was necrosed and softened in process of breaking down, a probe introduced up the nostril passing

through the necrosed portion and entering the cranial cavity. This necrosed plate corresponded to the portion struck by the probe which had been passed for exploratory purposes during life.

No communication could be discovered between the nasal cavities and the frontal sinus.

The superior and middle turbinated bodies were found to be covered with fœtid granulation tissue and a microscopic section of the inferior turbinals showed evidence of progressive atrophy. The wound made at the time of the operation was found to be firmly uniting.

Microscopic Appearances of Turbinal Body, from Section made by Mr. WYATT WINGRAVE.

The surface epithelial cells show advanced cloudy degeneration; hyaloid membrane has disappeared; lymphoid spaces contain a large number of large oval and round bodies, with and without nuclei, the nature of which is somewhat doubtful; probably they are phagocytes. There are also non-nucleated round bodies, suggestive of micrococci; the glands show advanced granular degeneration. The cavernous vascular channels are partly obliterated; the periosteum is thickened, whilst the bone is not materially affected.

Remarks by Mr. LENNOX BROWNE.—This case is interesting. First, as showing the dangers which may accrue from neglect of the treatment of suppuration in the frontal sinus. Without doubt, so soon as a diagnosis was established by the bursting of the abscess, a passage should have been made through the nose to insure a free exit for the discharge.

Secondly. It indicates that communication between the nasal cavities and the frontal sinus by the infundibulum is not only not constant, but even when present is generally of such very small normal calibre that it may readily become closed, as a result of inflammation. It is probable that this obstruction of the infundibulum may be an important predisposing factor of frontal disease.

Thirdly. It is worthy of remark that so much mischief should have existed, and that suppuration should have extended so far into the peridural space, with so little indication of cerebral lesion.

Fourthly. We were, of course, prepared to find considerable extension of the inflammation into the ethmoidal region, but it was hardly expected that the condition was so hopeless as the autopsy revealed.

In any future case I should first assure myself that there is a free communication between the nose and frontal sinus, or if not, I should effect the same, as a first step of the operation—or at an even earlier period as an independent step—by the passage of an instrument in the normal situation of the infundibulum, that is, in the anterior portion of the hiatus semilunaris.

Lastly. It has been demonstrated, especially by Michel, and his observations have been confirmed by Robertson, of Newcastle, that there is a direct connection between empyema of the antrum and atrophic rhinitis. I may also *en parenthèse* allude to such a case seen this morning, in consultation with our President, in which not only do both these conditions exist, but there is also so long a spur springing from the left wall

of the septum that, according to Bosworth, we should expect hypertrophic instead of atrophic rhinitis.

The present case illustrates that there may be a similar connection —whether causal or resultant, I am not yet in a position to determine— between empyema of the frontal sinus and intra-nasal atrophy. It will be useful to bear these facts in mind in our observation of future cases.

Mr. BARK (Liverpool) related the history of a case sent to him in 1889 by an ophthalmic surgeon. The patient was a boy, aged fourteen. Some years before he had received a blow on the forehead from a stick. For twelve months preceding his presenting himself for treatment he

had noticed a gradually increasing swelling at the inner and upper angle of the left orbit. There was no pain, and he sought advice solely on account of the increasing deformity and diplopia.

He presented the appearance well shown in the photograph passed round by Mr. Mayo Collier. A tumour in the upper and inner part of the left orbit, elongated oval in shape, semi-fluctuating and elastic on palpation.

Manipulation caused some uneasiness, but no pain. The left eyeball was protruded and displaced downwards and outwards. There was no discharge from the nose, and rhinoscopic examination revealed nothing abnormal in that situation. On making an incision a quantity of thick, glairy, honey-like fluid exuded. The outer wall of the frontal sinus was eroded, so that the finger could be placed into the sinus, but a probe could not be passed into the infundibulum. An opening into the nose was made by means of a trocar, which was pushed through a thin plate of bone which separated the sinus from the narial cavity.

A drainage tube with side holes was inserted, reaching from the forehead to the outside of the left nostril. The discharge became purulent

after a few days. Warm boracic lotion was syringed through the tube twice daily. The discharge gradually diminished in amount, and at the end of six months ceased. The drainage tube was then withdrawn, and the wound healed. The lad's appearance was restored to its symmetry, and normal vision was completely restored. He thought that great benefit might attend the operation of opening the sinus as described by Mr. Collier, especially in certain obscure cases of frontal headache.

Dr. DUNDAS GRANT.—*Case of Empyema of the Frontal Sinus.*

J. M., aged thirty-five, was sent for my opinion in July, complaining of pain over the left frontal region, and a discharge from the corresponding nostril. His trouble commenced last January with influenza, attended with severe frontal pain, throbbing and fulness, more marked on the left side. Early in the attack a discharge of pus came from the left nostril, giving him relief from the throbbing and pain. There was no hæmorrhage at any time.

The discharge is most copious in the morning, almost absent at night, and it is much clearer when he has a cold. It is not modified by lying on either side, but is worse when he assumes the upright posture.

There is slight fulness and tenderness over the left frontal sinus. The left nasal passage is narrow, there is a swelling of the middle turbinated body, and from below it there wells out the creamy pus seen in empyema of the antrum.

On Lichtwitz's puncture no pus was evacuated, and by transillumination both antra appear translucent. I could not illuminate either frontal sinus. The application of cocaine to the middle turbinal gave temporary relief, and I ordered, for the time, an antiseptic wash, and an ointment for the mucous membrane.

It is my intention to open the frontal sinus from the superciliary region, and I hope to be able to report well of the case at our next meeting.

Mr WYATT WINGRAVE related for Dr. Orwin the case of a boy, six years of age, with a discharge of pus through an opening on the right side of the nose. There was some pain, and the opening had formed between six and eight months previously. On introducing a probe, it passed backwards and upwards for three inches, giving a distinct impression of dead bone, and on withdrawing the probe blood followed. The sinus was filled with granulation tissue. He supposed that there was abscess of the ethmoid and frontal sinuses, although as shown by Mr. Collier, and generally admitted, a frontal sinus was rare at this age.

Dr. SCOTT (Onehunga, New Zealand).—*Notes of a case of Empyema of the Frontal Sinus.*

In 1890 a shipping clerk came under my care with the following history :—He is a married man with healthy children. Until five years ago he had been perfectly healthy and had won several prizes as an athlete, but of late years he found himself less vigorous. For the past six years he had been suffering from what he called "brow ague," which he considered identical with what his father formerly suffered

from, and he thought he had inherited it. He had periodical attacks of headache, occurring with remarkable regularity, at intervals of about a month or six weeks, independent of the weather or of any other known exciting cause. The distress was confined to the right side of the forehead, and the most painful area corresponded to the distribution of the supra-trochlear nerve of that side. This area was at the same time very sensitive to touch. In each attack the pain came on at first very slightly, and gradually increased in severity until it became, as he described it, unbearable, and then after a week or so of pain, which interfered with his work and prevented him from sleeping properly, it suddenly ceased.

At this time, corresponding absolutely with the cessation of pain, a fœtid discharge of ichorous pus, offensive both to himself and to those in his company, on account of its odour, would commence to run from the right nostril, in some considerable quantity, for a period extending from a few days to a week or so. At a variable, though comparatively short period after the cessation of this discharge the pain recommenced, and he went through another cycle of disturbance as previously described. He had at various times given quinine, arsenic, and other anti-periodics a good trial, but obtained no benefit from their use. Recently, antipyrin had given a little temporary relief from the pain.

On examination, the area corresponding to the right frontal sinus was clearly more prominent than the same region of the other side. There was no perceptible modification of any other portion of the walls of the frontal sinus. The right nostril presented some slight hypertrophic rhinitis, more especially of the middle turbinal bone, but there was no obstruction to nasal respiration. The antrum was clear; the eye was without fault and was normal in its position and movements; the fundus was healthy; the temperature whilst he was under my observation was normal, nor could I obtain a history of the usual symptoms of suppuration. I could get no definite history pointing to the cause of the affection, though his occupation for ten years or more had entailed frequently leaving an office and standing about on a wharf in all kinds of weather, and this he was accustomed to do without putting on any extra clothing; this would expose him to attacks of catarrh. His family history is unimportant, except in the fact that his father had suffered from similar pain for many years in earlier life, but is now quite well.

From the symptoms and physical signs I concluded that there were sufficient grounds for exploration of the frontal sinus.

The patient being anæsthetized, I made an incision through the tissues parallel to and just above the right eyebrow, exposing the inner two-thirds of the supra-orbital ridge, reflected the periosteum from the bone at the most prominent part, which was just above the position of the supra-trochlear notch, when there is one, and at this point drilled through the outer table of the skull, using an ordinary carpenter's brad-awl, filed so as to have an acute-angled point. On removal of the drill a bead of pus welled up through the opening. I then probed the cavity to explore its size and the position of its walls, and, using the drill as a director, gouged through the bone, making an opening into the frontal sinus one-third of an inch in diameter. I next attempted to pass a probe

through the infundibulum into the nares, but finding some difficulty in doing this, I made sections of two or three skulls, and so found the proper curves to be given to the probe to allow of its passage, and as the cells and canals in the skulls I used were fortunately fairly similar to those of my patient, I now found the probe to pass readily. I could detect no disease of bone.

From this time there was a free discharge of pus, both from the opening in the skull and from the nose. The cavity of the sinus was irrigated with antiseptics for about six weeks, during which time I passed daily a properly curved probe through the sinus into the nose. The wound gradually contracted and finally healed, leaving but a slight cicatrix.

In May, 1892, when I last saw my patient, he was quite well, and there had been no recurrence of discomfort. This case presents some points of difference from those I have hitherto seen recorded, as usually the thinner plates of bone have given way to the pressure, as would be expected, and so one or other of the orbital plates have been displaced.

Mr. PEGLER referred to the case of a little girl of fourteen. The salient features were a puffy swelling on the inner aspect of the left fronto-nasal articulation, with displacement of the eye outwards. Examination of left nostril with speculum showed a distension, and hypertrophy (? cystic) of the left middle turbinate. It was hard to touch, very vascular, bled easily, but nothing could be snared from it. At St. Mary's Hospital, where the case occurred, Mr. Lane made an incision over the swelling, the bone was trephined, and an opening made into the anterior ethmoidal cells large enough to admit a finger. It was probable that a communication existed between the frontal and ethmoidal sinuses.

Glairy semi-purulent fluid escaped from the opening made, and several lappet-like proliferations of the mucous membrane were curetted away with a spoon. A perforation was afterwards made into or beside the middle turbinate, and a drainage established through the opening in ethmoidal cells. The opening is closed now, but the case is not concluded. It is, however, pretty clear that the hypertrophy of the middle turbinate, and consequent blocking of the left infundibulum, was the cause of the distension of the accessory sinuses and growth of the proliferations.

Dr. MILLIGAN said he had been three years associated with a special hospital without ever having met with a case of this kind. He asked for statistics as to its frequency. He asked whether anyone had operated on a case of abscess of the frontal sinus, when there was no communication with the nose. He thought that ophthalmoscopic examination must be of great importance in such cases. Only a thin plate of bone separated the frontal sinus from the base of the brain, and retinal examination might give valuable prognostic information. He remarked on the fact that in Mr. Browne's case, with such extensive lesions, no ophthalmic signs were discovered. He asked whether any cases were on record in which the affection had resulted from direct injury to the part.

Mr. STOKER said he had listened with great interest to the series of cases. He said that he had never seen a patient whose condition was suggestive of this lesion, but he himself had on one occasion suffered

from severe frontal pain following a bad cold in the head, and this was accompanied by a profuse discharge of a yellow colour which brought relief. He suggested that under certain circumstances catarrhal conditions might result in blocking of the infundibulum, and so conduce to accumulation. In every case there had been some discharge from the nose, indicating the patency of the infundibulum. This would lead to the conclusion that one of the first steps ought to be to attempt to restore the patency of that canal; a course which has the advantage of offering a dependent opening through which the discharge could escape. Such treatment might render more serious measures unnecessary.

Dr. HILL did not believe that the case mentioned by Mr. Pegler was one of disease of the frontal sinus. He had seen the case, and had come to the conclusion that it was one of fibroma of the nose. The middle turbinated bone was much hypertrophied. Not only were the nose and eye displaced, but the nasal process of the superior maxillary bone was deviated. There was, however, no displacement of the bone at the angle of the orbit. He did not suppose that a girl of sixteen had a frontal sinus, or at most but a small one. He maintained that it was not from the frontal sinus, but from the ethmoidal cells that the discharge came. It was at first diagnosed at St. Mary's Hospital as an exostosis, then as malignant disease, and eventually opened, polypi being found as described. He had recognized it as being a case for which he himself was not sufficient, and therefore handed the case over to Mr. Lane. These symptoms in young people always pointed to disease of the ethmoidal cells. Since then he had found in the dissecting room a skull in which the ethmoidal cells were in communication with the frontal cells. Mr. Lane was of opinion that the case in question was such an one. He quite agreed, however, that obstruction of the nose might give rise to an accumulation in the frontal sinus.

Mr. MAYO COLLIER, in reply, said he had been asked whether they were to consider that this condition was, as a rule, associated with disease of the nose. He had distinctly stated that this was not always so. In the cases reported there had been little or no disease of the nose or throat, except in the cases of polypus of the sinus. He had pointed out that polypi were almost always associated with the same disease in the nose, but otherwise there need be no association. With regard to the frequency of these cases, he said they must go to the ophthalmic surgeons for that information, seeing that patients usually applied to them in the first instance. He was disposed to think that such cases were by no means rare in ophthalmic practice, but he was not prepared to say in what proportion. In reply to the question as to the existence of disease of the frontal sinus consequent on injury, he said he had seen a case last week in which the front wall of the sinus had been smashed in.

Mr. LENNOX BROWNE observed that the fact that the diseased cases generally came under the notice of ophthalmic surgeons might explain how it was that concomitant disease of the nose had not been remarked. In all the cases observed by them there was disease of the nose. He

hoped they might turn out to be cases in which by an operation on the eye they might hope to get rid of a deforming disease of the face.

Mr. COLLIER said that explanation was possible, but he would not like to endorse it, in view of the opinion which surgeons generally held with regard to their particular abilities.

Mr. LENNOX BROWNE insisted on the fact that many diseases of the eye were due to diseases of the nose.

The PRESIDENT said that he had recently had three cases of inflammation of lining membrane or of abscess of the frontal sinus, the patients all coming as ophthalmic cases because of the eye symptoms. In the first two cases there was marked swelling over the frontal sinus, with downward and forward protrusion of the globe. He treated them in exactly the same way as for mastoiditis, cutting down and finding carious bone, which was followed by rapid recovery. In the second case there had been a very severe attack six months previously (due to exposure to cold) of intense frontal neuralgia on one side. She had then apparently recovered after a month or two of treatment. The third patient, a young girl, had similar symptoms, accentuated on reading, but this he thought was due to the position assumed, and not to the mere use of the eyes. There was a tender red area over the frontal sinus. She recovered completely after the application of leeches. In all three cases there was a history of influenza previously, and he thought this class of case had become much more common since the prevalence of influenza.

Dr. DUNDAS GRANT expressed his admiration for the paper. He asked whether the sections of skulls demonstrated by the author were accidental specimens, or whether the specimen at each age was an average one. (Mr. COLLIER.—Each is an individual case.)

There seemed to be a want of definite rule in respect of the sinus formation. He thought that such cases were rare. The case brought forward by himself was almost unique in his experience. He was anxious to hear from members whether there was any hopeful way of treating them short of external operation.

Mr. PEGLER said, that if as suggested by Dr. Hill the case alluded to was really not one of fronto-ethmoidal disease, the case was all the more interesting. He hoped that at some future meeting the question of ethmoidal disease would be brought forward and dealt with in the same way as the question of disease of the frontal sinus had that day been dealt with.

Mr. WYATT WINGRAVE observed that the infundibulum was looked upon as a special aperture of communication between the nose and the frontal sinus, and this raised the question as to its exact relations to the ethmoidal cells which do communicate with the frontal sinus. He observed that one authority described it as a special canal, whilst another considered it as being merely a modification of the anterior ethmoidal cells. At all events it was extremely difficult to find, even in the dissecting room.

The meeting then adjourned.

The following gentlemen were elected Hon. Fellows of the Association :—

Dr. FRANCKE HUNTINGTON BOSWORTH (New York).

Prof. VON SCHROETTER (Vienna).

The following gentlemen were elected Fellows :—

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